OCTOBER 17, 1942

Railway Age

Founded in 1856

NO DEMURRAGE IN 11 MONTHS!

AVERAGE HANDLING TIME PER CAR, 29 Hours; 29 Minutes; 46 Seconds.

McCARTNEY LIBRARY
GENEVA COLLEGE

Since November 1st, 1941, we have had no demurrage on any freight cars bringing material into, or taking material out of, any of our 10 plants.

During the 11 months, from November 1, 1941 to October 1, 1942, we handled a total of 20,395 cars at all of our plants.

Of the 48 hours free time allowed to load and unload freight cars we have only used an average of 29 hours, 29 minutes and 46 seconds per car.

This represents a total saving of 15,724 car days of 24 hours each. This saving equals 157 freight trains of 100 cars each.

We thus have continued to eliminate all demurrage since we decided 11 months ago that "IT CAN BE DONE"—this is of tremendous importance during these trying times, for we are sending cars so badly needed for winning the War back into service with the least possible delay.

IT CAN BE DONE!

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

RAILWAY ROLLER BEARINGS

HELP ASSURE VICTORY

Buy War Bonds. Conserve Rubber. Eliminate Unnecessary Travel—and Travel Light. Use the Telephone Only When Important. Salvage All Scrap and Waste Material.

...on the Frisco's new "4500"s...

ALL journals revolve in an OIL-bath

delivered by

HENNESSY

Mechanical Journal LUBRICATORS

ALL journals . . . lead-truck, driving, trailer and tender . . . all 28 of them—on the Frisco's new Baldwin-built "4500's" revolve in an oil bath,—delivered by HENNESSY *mechanical journal* LUBRICATORS. Perfect initial performance when journals and bearings are new is a good gauge of the lubrication afforded.

Scarcity of essential materials resulting in radically changed bearing metals makes adequate lubrication with proper fluid lubricant absolutely necessary.

HENNESSY LUBRICATOR

More than 4600 Hennessy *Driving* Journal Lubricators in use.

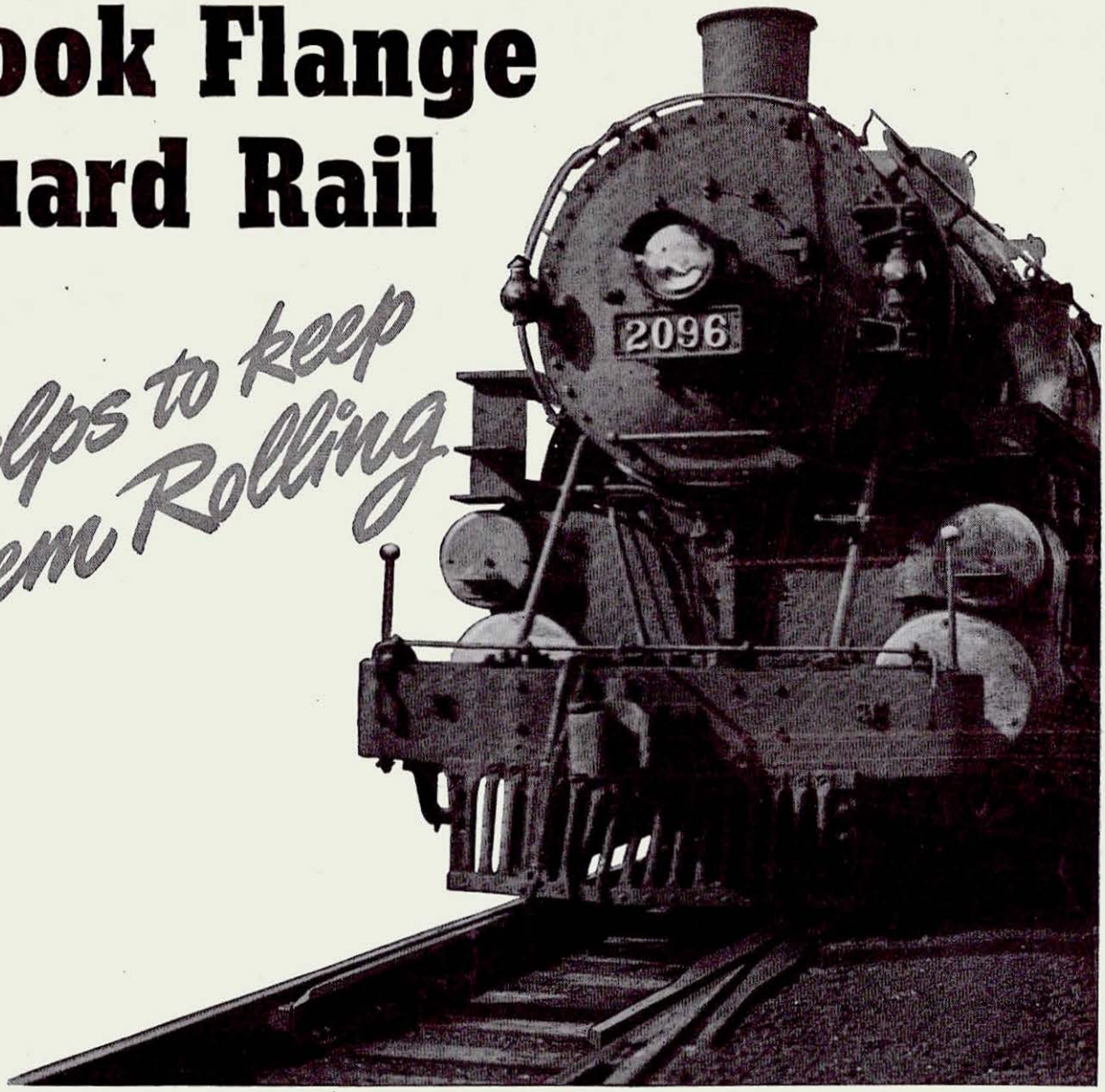
Hennessy Lubricator Co., 75 West St., New York

Mechanical OIL-Lubricators for all journals of railway equipment

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 113, No. 16.

Hook Flange Guard Rail

Helps to keep them Rolling



Almost any guard rail can be adjusted for proper alignment and flange clearance. But how long will it maintain its alignment, its guarding action?

This question is of particular importance today. For vital war shipments must go through, and time-consuming maintenance inspections be kept down.

Bethlehem's Hook Flange Guard Rail is helping upwards of 75 trunk-line railroads in the new ton-mileage records they are establishing. Unlike other guard rails, it remains upright regardless of thrust and is virtually unbreakable. (Not one has ever been known to break in service.) It does not easily get out of alignment. Further, its cushioning action eases fast-moving wheels into line safely, and thus lessens the danger of cracked or chipped wheels.

The Hook Flange Guard Rail is one of many Bethlehem products such as Rails, Bolts and Nuts, Frogs and Switches, Special Trackwork, Switch Stands, Wrought Steel Wheels and Forged Axles, Boiler and Firebox Plates, that are helping the railroads to fulfill their heavy responsibility in America's war effort.

BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL

THE TEST IS TOUGHER NOW, BUT

"Stretching" passenger equipment to meet wartime traffic needs

"I don't know what we'd do for passenger power if we didn't have those COR-TEN cars. We haul a lot more passengers since the war started, but we get along all right because we can hook on four or five more cars before we have to double-head the train."

Extra payload capacity keeps on paying dividends

"It doesn't take any fancy figuring to prove that COR-TEN cars are making money for our road. They don't weigh any more than the old cars when they're loaded but the COR-TEN cars carry four or five tons more. Those extra tons don't cost a cent to haul and the revenue for handling them is all clear profit we figure."

Six years' service proves COR-TEN cars stand up

"When we got our first lightweight COR-TEN hopper cars, the sheets looked so thin that we just didn't believe the bodies would stand up in service. These cars have now been in service six years and I feel sure they will go as long as the copper-steel cars before needing heavy repairs."

U·S·S High Tensile Steels

AMERICAN STEEL & WIRE COMPANY
Cleveland, Chicago and New York
CARNEGIE-ILLINOIS STEEL CORPORATION
Pittsburgh and Chicago
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
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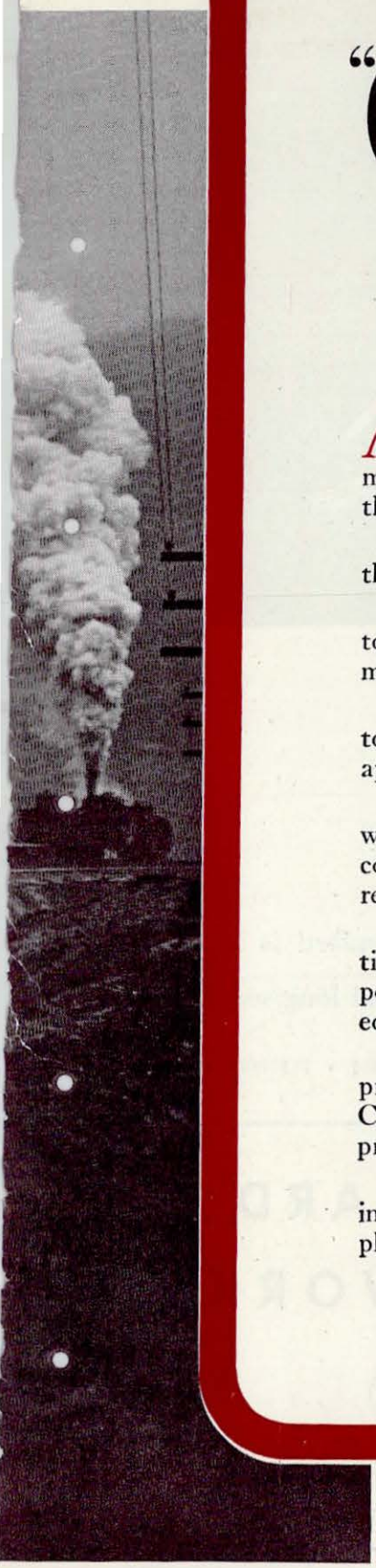
UNITED

THE ANSWER IS THE SAME . . .



"COR-TEN equipment delivers the goods"

ASK any road using COR-TEN-built equipment how these lightweight cars are performing under war conditions. You'll be surprised how many ways there are of saying that COR-TEN cars seem built to order for the job the railroads are facing today.

The 43,000 COR-TEN freight cars now in operation are taking in stride the heavier loading and higher speeds demanded by the war effort.

1600 passenger cars, built lighter with COR-TEN, by making it possible to haul more cars with less motive power, are helping appreciably to meet the situation created by the unprecedented rise in passenger traffic.

Every day, as the war goes on, the ability of this COR-TEN equipment to stay in service with a minimum of shoppings is becoming more apparent.

In fact, every claim made for lightweight equipment when COR-TEN was first introduced more than eight years ago is today being thoroughly confirmed in the tough test of wartime operation. We point to this record with justifiable pride.

At present COR-TEN is not generally available for railroad construction. War has first call on this superior high-strength steel and every pound being produced goes directly into absolutely essential war equipment.

But, while we regret that we are unable to fill your orders now, we can promise you this . . . just as soon as COR-TEN's present job is done COR-TEN will be back to save weight, increase payload capacity, to prolong life and reduce operating costs.

In the meantime, our engineers will gladly show you how you can include lightweight COR-TEN construction most economically in your planning for tomorrow.

USS

• STATES STEEL

At every step . . . Standard

CONTROLS *its steel*

From acid open hearth to finished forging, the processes of steel making at Standard are under rigid, painstaking control. Especially trained metallurgists and chemists carefully analyze the materials used in Standard products safeguarding the high quality which is a "must" with every forging delivered to a Standard customer.

In tires, steel wheels, springs, axles, crank pins, connecting rods, piston rods, driving wheel centers and many other steel products the name Standard is an assurance of dependability and long service life.

FORGINGS • ROLLED WHEELS • TIRES • CASTINGS • SPRINGS

STANDARD

STEEL WORKS

DIVISION OF

THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA

CALLING ALL RAILROADERS!

● You all know me.

I've spent most of my life patrolling the roadbed.

The other morning you saw me picking cinders out of my brogans down by the switchman's shanty.

Later you found me upstairs in an office, peeking at train sheets and listening to dispatchers' lingo.

Maybe, next day, you wondered why I was hanging around a freight yard instead of counting ties on the main line.

Well—it's no secret. This old trackwalker has a new job, and it's a honey! I'm looking for the inside stories about American Railroaders at war.

You've heard how America's 250,000-mile railroad system is thundering day and night, making the mightiest transportation effort of all time? You've heard how 6,500,000 boys in service khaki have been shuttled back and forth across the continent by our railroads? And how 1,000,000 tons of war and civilian materials are rolling over our steel rails every minute of every hour?

Mister, those are tremendous facts and figures—but they don't tell the real story of railroading. It's something like seeing train smoke rising from behind a hill. You know that a locomotive is pulling a string of cars—but you can't see the engine, the cars, or the trainmen who keep their train moving.

The real story of American railroading is about fellows like you. More than 1,000,000 hard-working, quick-thinking, well-seasoned railroaders, doing your duty as daily "routine"—but performing miracles in transportation.

So my new job is to patrol all the American railroads, getting smoke in my eyes, the smell of hot oil in my nose, the hiss of steam in my ears, and grease on my clothes.

From men on the main line and sidetracks, at whistle stops, back shops and supers' desks, in signal towers and roundhouses I'm picking up your stories about what railroading really means to America.

These stories will surprise some of you—but all of them will make all of you proud of the men and women who have made ours the world's greatest transportation system.

I've got the "all clear" signal, and you'll see stories about you and your fellow railroaders each week on this page.

Slow down here next week and read how—in spite of an international hot box—American railroaders are running trainloads of fighters and war freight on *High Iron through Iran.*

—The Trackwalker

Alco GE

AMERICAN LOCOMOTIVE ● GENERAL ELECTRIC

114-29-9500

This Freight gets there Faster!

. . . BECAUSE ICINGS ARE FEWER!

. . . BECAUSE ICE LASTS LONGER!

. . . BECAUSE HAIRINSUL IS ON THE JOB!

There's less time out for icing when refrigerator cars are insulated with HAIRINSUL. That's more important than ever these days . . . for freight must roll ever faster to supply the needs of a war-quickened America. And since no new refrigerator cars can be built, it's *vital* that your present equipment be kept at peak performance . . . longer!

When you rebuild your refrigerator cars . . . line them with HAIRINSUL to get utmost cooling efficiency out of every pound of ice. HAIRINSUL is a permanent investment—it *never* wears out, *never* deteriorates, *never* loses its protective properties, can be re-used elsewhere when the car gets too old for service. HAIRINSUL is a thick, all hair, flexible blanket that may be flanged, curved or fitted to any surface. It resists fire, is unaffected by moisture, doesn't pack down. Has low thermal conductivity of only .27 BTU's.

We'll gladly send you complete engineering data and samples of various weights and thicknesses.

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MERCHANDISE MART, CHICAGO

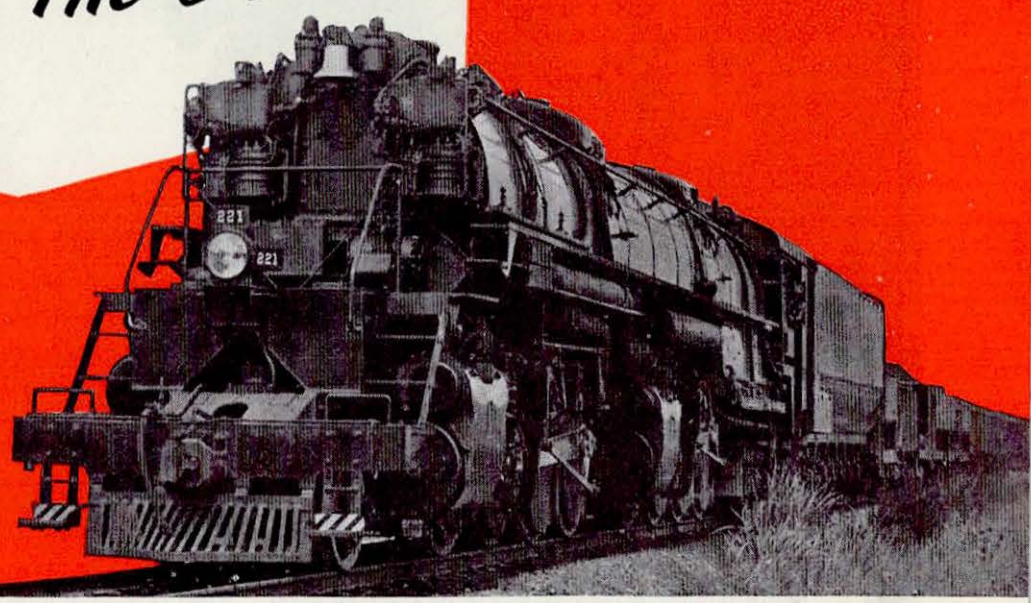
Available for Immediate Delivery
No Priorities Needed

HAIRINSUL

★ ALL HAIR INSULATION FOR REFRIGERATOR CARS ★

Baldwin serves the Nation which the Railroads helped to build

America's Railroads are *Delivering the Goods*



with Baldwin Steam Power....

Modern steam locomotives, many of which were built by Baldwin, are bearing the brunt of the greatest freight traffic movement in the history of the American railroads.

The demand for heavy tonnage, combined with high speed, finds an answer in modern steam locomotives with large diameter driving wheels, great boiler capacity, a high degree of superheat and low steam consumption per horsepower. Fewer such locomotives are required for a given service and double-heading is reduced to a minimum.

As never before, America needs its railroads to transport military equipment and men—to haul the coal, iron ore, and other raw materials to industries producing the sinews of war—to bring food and other necessities of life to soldier and civilian alike.

As never before, the railroads are utilizing the inherent advantages of modern steam power to haul these great tonnage trains over the road. With steam and diesel locomotives, military tanks, guns and other war materials—*Baldwin Serves the Nation Which the Railroads Helped to Build.*

BLW THE BALDWIN GROUP

THE BALDWIN LOCOMOTIVE WORKS

Philadelphia

Help Them Win...Turn in Your SCRAP!

Scrap is steel or iron useless in its existing form but valuable as *raw material* for remelting. Since it is already refined, more scrap in the furnace charge speeds up the refining process and enables steel to be turned out faster for implements of war . . . More scrap—*from your plant*—means more steel.

Conservation Authorities Recommend the Following 8 Steps

1. Put some one individual in charge of scrap in all departments of your business and GIVE HIM AUTHORITY TO ACT.

2. Comb the plant and yards for dormant scrap, abandoned equipment, old boilers, pipe, moulds, obsolete dies and parts, material now being destroyed which has salvage value.

3. Survey all plant equipment, particularly idle standby or discarded machines, with a view to applying or converting them to useful production.

4. SEGREGATION: Identify, classify and segregate scrap and supervise its handling to avoid contamination. This will increase its value. Provide separate containers, clearly marked for each class of scrap material.

Repair or rework worn or broken cutting tools. Keep unusable small pieces and turnings segregated. Even high speed steel grinding dust is valuable.

Dismantle discarded equipment promptly into its components — electrical, fastenings, lumber, etc. — so that these parts may be utilized or scrapped.

Sort blanks, short ends, cut-downs, clippings, etc., for possible reuse for smaller parts made in the same or other departments.

Recover and reclaim used cutting oils, lubricants, surplus paints and spray finishes.

Sort sweepings and miscellaneous waste to recover scrap values.

5. Constant reminders in the form of posters, illustrations of right and wrong methods, pay envelope enclosures, house organ publicity, etc., are potent aids to the conservation program.

6. Release for scrap, obsolete engravings, electrotypes, and standing types for catalogs, forms and advertising material.

7. Inspect all refuse to detect avoidable waste and excessive rejections. Educate production executives to correct such conditions at the source.

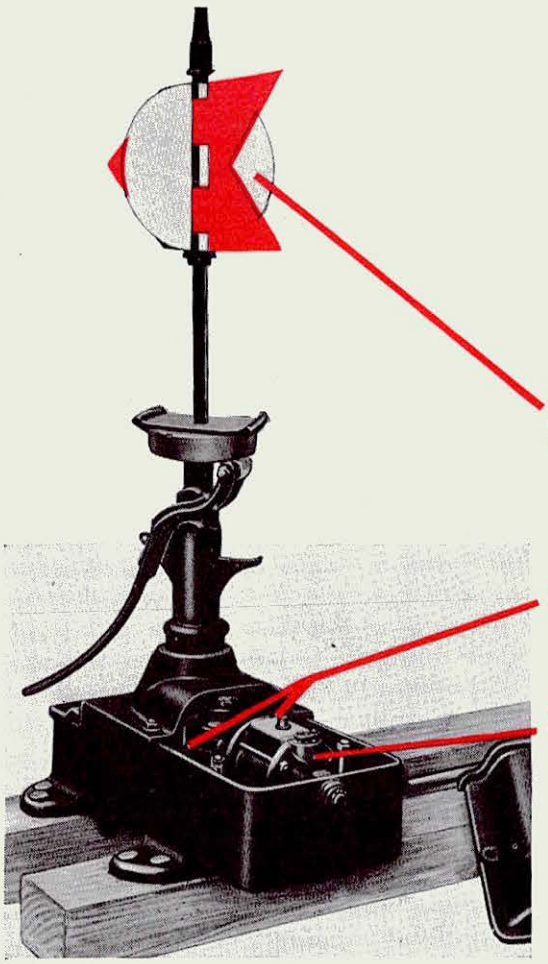
8. For information and assistance on special phases of conservation and salvage communicate with Industrial Salvage Section, Conservation Division, War Production Board, 9th Floor, Washington Gas Light Building, Washington, D. C., or with nearest regional office.

The metallurgical experience of our technical staff is available to aid you in these and other technical phases of metal salvage.

KEEP SCRAP MOVING INTO WAR PRODUCTION!

THE INTERNATIONAL NICKEL COMPANY, INC. **67 WALL STREET NEW YORK, N. Y.**

Unnecessary Train Stops Delay Deliveries



Spring switches, particularly at ends of double track, passing sidings, yard entrance and departure tracks, and at locations where traffic must flow freely, avoid many unnecessary train stops. The high cost of a train stop is secondary today to the time lost in making deliveries. Under existing conditions, trains must be kept moving. Economy follows as a natural result.

The Racor Three-In-One Switch Stand combines in one compact housing the three distinct features required for the efficient operation of spring switches:

1. **RIGID SWITCH STAND** For free hand operation in either direction. Switch points must be fully closed before the stand can be latched or locked. The target indicates the position of the switch points.

2. **AUTOMATIC RETURN** Either of its two springs is sufficient to automatically return a trailed switch to its original position.

3. **RETARDED RETURN** An adjustable oil buffer permits free opening of the switch by a train, but retards its return gradually after the last pair of wheels has passed.

In addition, the Three-In-One Switch Stand is installed as readily as an ordinary switch stand and requires no special connecting equipment. It permits accurate fitting of switch points without the use of adjustable clips or moving the stand.

RACOR

RAMAPO AJAX DIVISION

THE AMERICAN BRAKE SHOE & FOUNDRY CO. • 230 Park Ave., New York

Every man functioning in a supervisory capacity in the engineering, maintenance and signal departments, should have a copy of this booklet, just off the press. It thoroughly describes the construction, installation, maintenance and operating advantages of this modern spring switch control development. Mail this convenient coupon for your copy today →

T. E. Akers, V.P. Date.....
RAMAPO AJAX
Division of American Brake Shoe & Foundry Co.
Niagara Falls, N. Y.

Gentlemen: Please send me a copy of your Bulletin No. 42-A, describing the Racor Three-In-One Switch Stand.

Name.....

Title.....

Company.....

Address.....

A .....

WAR IS HELL!

Yet this war could be worse than hell. Crucial battles will be lost and needless thousands of lives sacrificed unless our fighting men get all the equipment they need.

LET'S LOOK AT THE FIGURES:

Most of this equipment is largely made of steel. Our steel industry produced sixty-seven million tons in 1940. It broke all records by producing eighty-three million tons in 1941. *Yet we need still more.* This year the steel industry *can* produce ninety million tons if you and other Americans will gather up and turn in six million *additional* tons of scrap.

WHY SCRAP IS NEEDED:

New steel is made from scrap iron and pig iron—about half and half. Because the scrap has already been refined it cuts down priceless production time.

WHAT CAN YOU DO?

Plenty! Be sure you have salvage committees with energetic chairmen go over every inch of your yards, shops and rights-of-way. Gather all the scrap iron you can find and call the scrap dealer. He'll hurry it off to the steel mills *to help win battles, save lives* and *shorten the war.* All scrap collected will be purchased by the steel industry at government-controlled prices.

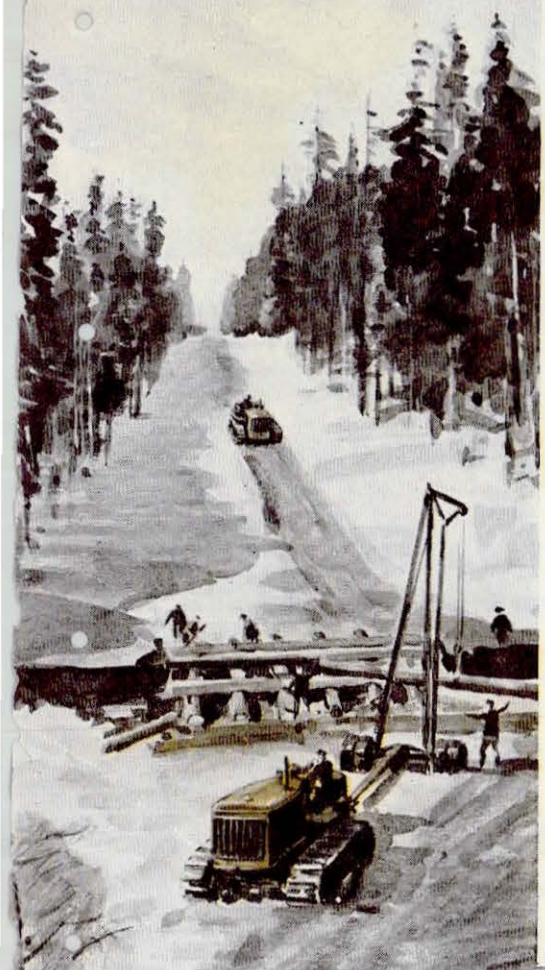
BACK UP OUR FIGHTING MEN:

The least you can do for our fighting men, perhaps someone close to you, is give them the equipment they *must* have. Every minute is precious. Get in the scrap—fast. Armco Railroad Sales Company Incorporated, 2890 Curtis St., Middletown, Ohio.

★ ★ ARMCO ★ ★

THIS ADVERTISEMENT IS IN SUPPORT OF THE SALVAGE PROGRAM OF THE CONSERVATION DIVISION OF THE WAR PRODUCTION BOARD.

ROAD TO TOKYO



UP IN the heart of the Northwest wilderness Army Engineers and contractors are making history. Through vast reaches of desolate bush, towering mountains and frozen muskeg, they're pushing an overland road, 1450 miles long. And they're doing it faster than any engineering feat of such size was ever done before.

This is a job for tough men and tough machines, and the Army has them both. Smashing steadily northward, powerful "Caterpillar" Diesel Tractors plow through logs and brush with their bulldozers. Behind them come huge scrapers, pulled by "Caterpillar" Diesel Tractors; and they in their turn are followed by "Caterpillar" Diesel Motor Graders. A great majority of the track-type tractors used by Army Engineers on this project are "Caterpillar" Diesels.

America's purpose is to have not only a great military road for the defense of our northern outposts, but a supply route for bases of *attack*.

"Caterpillar" Diesel Tractors, Graders, Engines and Electric Sets are furnishing rugged, dependable power to the fighting forces of all the United Nations. They're hauling guns, building airports, clearing jungle trails, powering naval craft, generating current for lights and communication on land and sea.

Here at home, "Caterpillar" dealers have shouldered the responsibility of keeping civilian equipment doing its sturdy share of the war production job. They're supplying parts and service, 24 hours a day, for all the machines that must now carry the load in industry and agriculture. They'll "keep 'em rolling!"

CATERPILLAR DIESEL

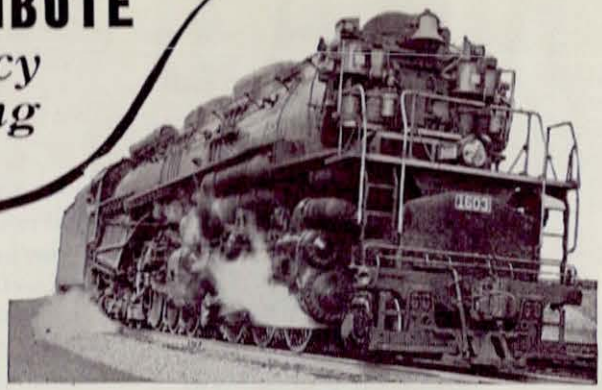
REG. U.S. PAT. OFF.

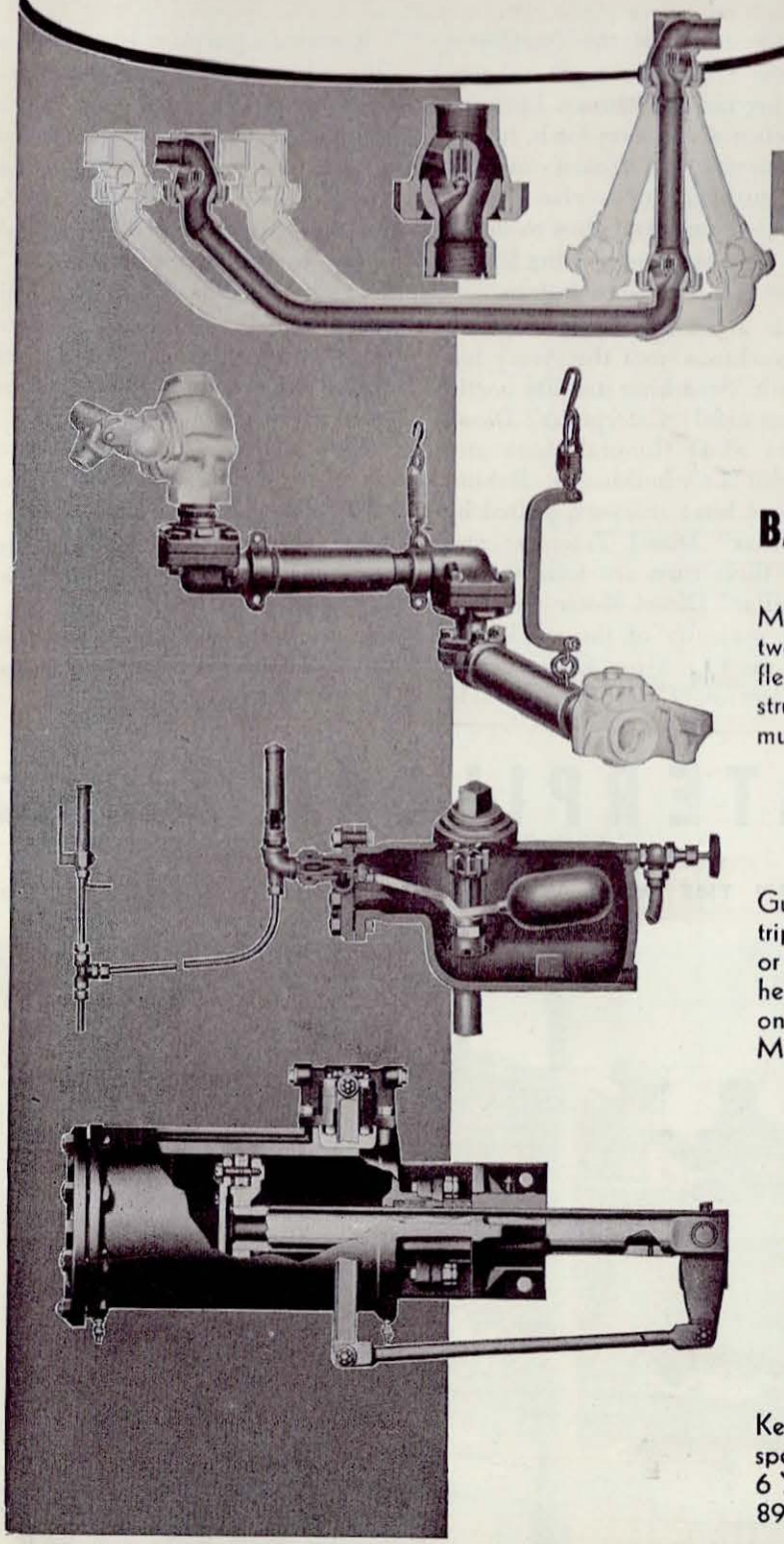
CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

TO WIN THE WAR: WORK—FIGHT—BUY U. S. WAR BONDS!

BARCO PRODUCTS CONTRIBUTE

to the safety and efficiency of War Time Railroading





BARCO ENGINE TENDER CONNECTIONS

Bolted direct to Locomotive and Tender, require no manifolds—minimum number of 90° bends—steel wearing parts—Hardened alloy steel forgings providing the utmost in safety, efficiency and low maintenance cost.

BARCO STEAM HEAT CONNECTIONS

For Passenger Cars and Rear of Tender

Metal wearing parts hardened alloy steel—only two wearing points per connection — maximum flexibility combined with simplicity and rugged construction provide maximum steam supply with minimum attention and lowest maintenance cost.

BARCO LOW WATER ALARM

Two-Whistle Float Type

Guards against engine failures—May be tested each trip in less than two minutes without any adjustments or disturbance of parts—Actuated solely by the height of the water above the crown sheet—depends on no other variables—Easy to Apply—Easy to Maintain.

BARCO POWER REVERSE GEAR

Provides the fine adjustment and precision-accurate control of locomotive valve motion essential to today's higher speeds. Maintains selected point of cut-off—even a broken air supply pipe will not change the position.

BARCO UNIT TYTAMPERS

Keep track in condition to handle present high train speed with safety, at minimum expense.
6 Years' Satisfactory Service.
89 Railroads now Using.

BARCO MANUFACTURING COMPANY

1800 W. Winnemac Ave. NOT INCORPORATED Chicago, Illinois

In Canada THE HOLDEN COMPANY, LTD.

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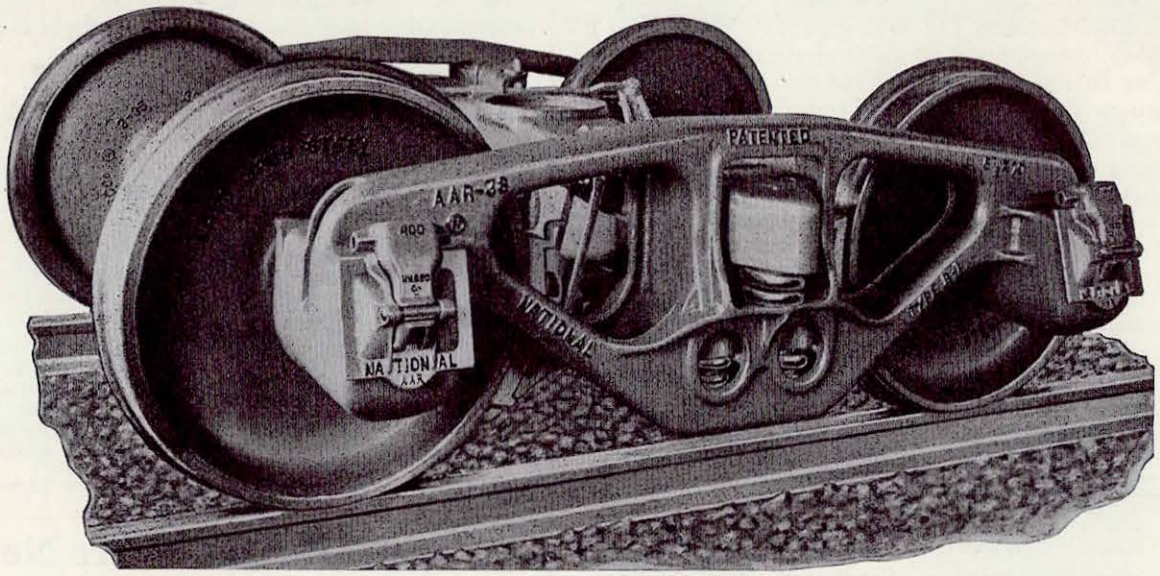
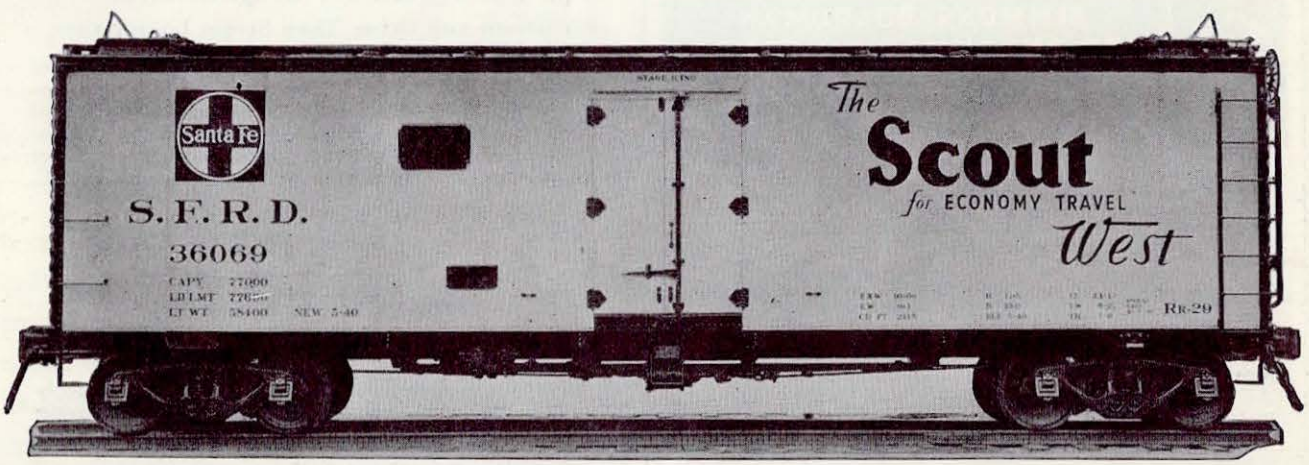
NATIONAL B-1 TRUCKS
with
DUAL CONTROL



ON cars carrying perishable goods or freight requiring quick delivery, National B-1 Trucks with Dual Control are most desirable, as these trucks assure smooth riding at high speeds, and reduce delays.

Specify National B-1 Trucks with Dual Control to keep cars "on the go."

They meet all A. A. R. requirements



NATIONAL MALLEABLE AND STEEL CASTINGS CO.
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Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

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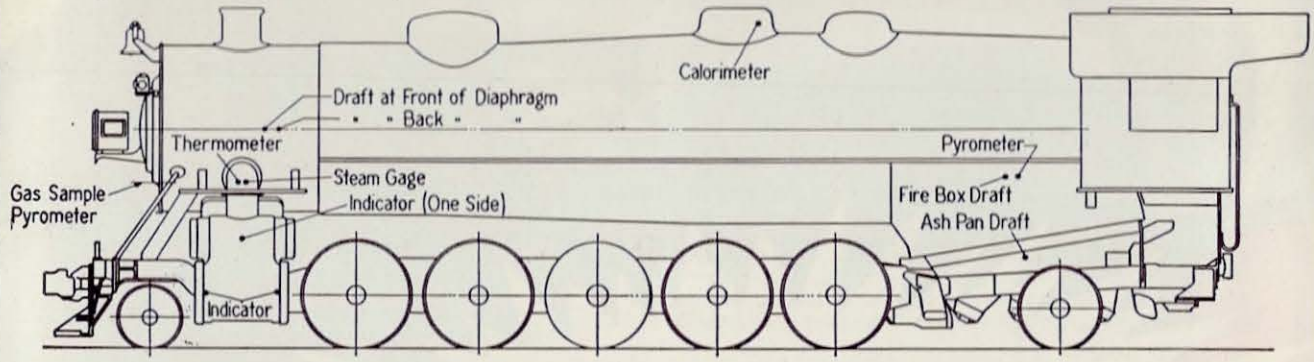
Now Ready

THE STEAM LOCOMOTIVE

By RALPH P. JOHNSON, M. E.

Chief Engineer, The Baldwin Locomotive Works



This is a complete treatise on the theory, operation and economics of the American steam locomotive. It is based upon current practice and recent research and material that has been tested out by the author and his co-workers. Comparisons are drawn with Diesel-electric and other types of motive power.

The author is a recognized authority on locomotive design, construction and testing. His experience in testing locomotives here and abroad with the aid of dynamometer cars is drawn upon for interesting observations on road testing methods.

To keep the subject matter as short as possible it has been stripped down to fundamentals, with just enough background included to indicate paths of development. The many tables have been checked against latest available data and the line drawings have been specially made for this book.

Sent on Ten Days' Free Examination

FREE EXAMINATION COUPON

Simmons-Boardman Publishing Corporation
30 Church Street, New York, N. Y.

Please send me a copy of R. P. Johnson's new book, THE STEAM LOCOMOTIVE, on 10 days' free examination. I will either remit the list price of $3.50 or return the book postpaid.

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R. A. 10-17-42

Table of Contents

Locomotive Classification—Locomotive Fuels—Combustion—Front Ends—Locomotive Cinders—Water for Boiler Use—Evaporation—Superheat—Tractive Force—Horsepower—Resistance—Tonnage Rating—Curves—Valve Gears and Valve Setting—Counterbalancing—Acceleration—Torque Diagrams—Locomotive Testing—Dynamometer Cars—High Speed Trains—Streamlined and Light Weight Trains—Motive Power for High Speed Service—Motive Power for Switching Service—Relation of Locomotive Operating Expense to Net Operating Income—Locomotive Repair Costs—Economic Life. Appendix A—Locomotive Testing Apparatus. Appendix B—Derivation of Economic Life Formula. Appendix C—Typical Locomotive Dimensions.

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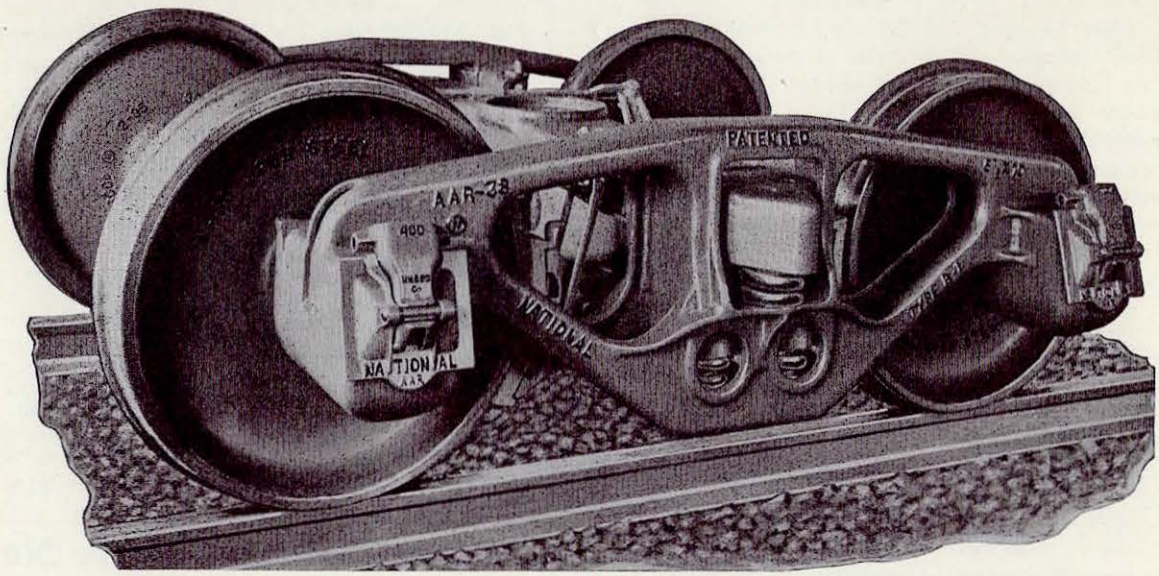
NATIONAL B-1 TRUCKS
with DUAL CONTROL



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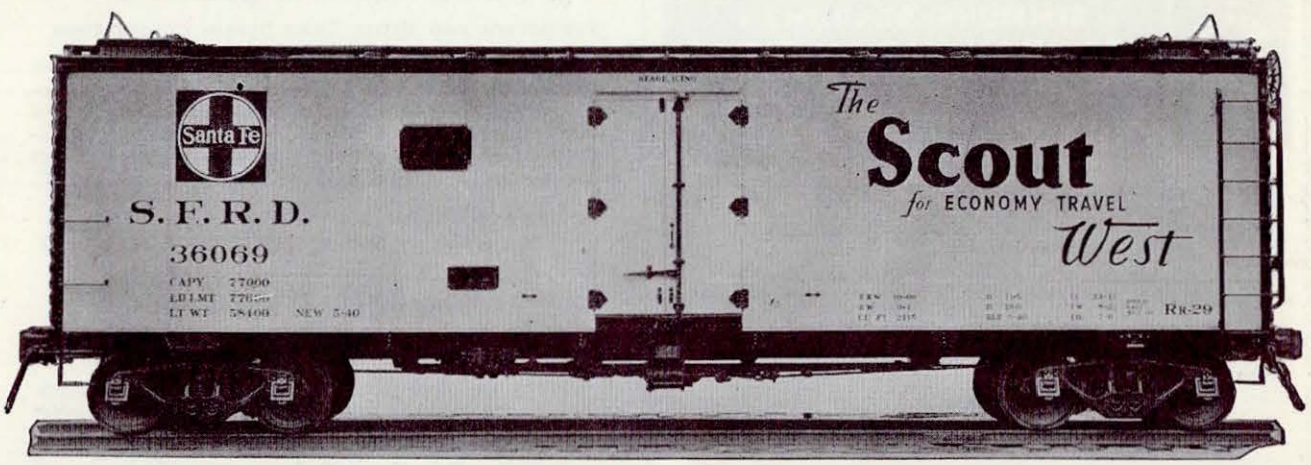

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Valuable Books for Your Library

The Steam Locomotive

By R. P. JOHNSON

Chief Engineer, The Baldwin Locomotive Works

Theory, operation and economics of the steam locomotive, in the light of recent research and current practice. Comparisons are made with the Diesel locomotive. Just enough historical background is given to indicate paths of development. This new book is of interest to locomotive designers, mechanical engineers, superintendents of motive power, locomotive shop superintendents, master mechanics and motive power officials.

502 pages, 100 illustrations, 70 tables, 6 x 9, cloth, $3.50

Railroad Electrification and the Electric Locomotive

By ARTHUR J. MANSON

Manager, Transportation Sales Department, Westinghouse Electric & Manufacturing Company

Written primarily for railway officials and operating men who desire a general knowledge of the design, construction, and operation of electric locomotives and of their application to different kinds of railroad service. Typical problems encountered in electrification of steam railroads are outlined, together with their solutions. Fundamental principles are stressed, and the book is illustrated with photographs, detail drawings, diagrams and charts.

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R. A. 10-17-42

Mastering Momentum

By LEWIS K. SILLCOX

First Vice-President, The New York Air Brake Company

The author explains the features of high speed operation which have been responsible for such innovations in braking as electro-pneumatic combinations, automatic rail sanding, retardation control, and wheel slide detectors in passenger service; and delayed emergency, rapid quick service propagation and positive release of freight car brakes. The influence of heavy, sustained braking upon wheel and car truck design is discussed, together with an explanation of the responsibility of high braking temperatures upon the shelling and thermal cracking of steel wheels. Spring suspension systems, dynamic effects upon riding qualities, track stresses, and weight transfer tendencies are analyzed. Draft gear design and its relation to shock absorption and the running stability of freight and passenger cars are investigated.

1941. 275 pages, 130 illus., 6 x 9, cloth, $2.50

When Railroads Were New

By CHARLES FREDERICK CARTER

A fascinating human interest story of the early American and Canadian railroads and of the men who built and ran them. The author, an old railroad man, tells of the beginnings of the Erie, the Pennsylvania, the Baltimore and Ohio, the New York Central, the first Pacific railroad, the Santa Fe, the Rio Grande, the Canadian Pacific and other lines. It is illustrated with reproduction of wood cuts of early locomotives and railroad scenes.

4th (Centenary). 338 pages, 17 illustrations,

6 x 9 inches, cloth. $2.50.

United States Regulations

For Steam and Other Than Steam Locomotives

Laws, rules and instructions for inspection and testing of steam locomotives and tenders, and other than steam locomotives, with interpretations, rulings and explanations on questions raised relative thereto, as prescribed by the Bureau of Locomotive Inspection. Includes safety appliance standards for locomotives as fixed by order of the I. C. C.

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Diagram of a 4-6-4 Hudson Type Passenger Locomotive

Shows 315 numbered parts, including all the latest appliances. Elevation scale drawings of locomotive and tender and four cross sections.

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Our research work on railway devices and castings has not been curtailed by our war efforts and production in this field is being maintained.

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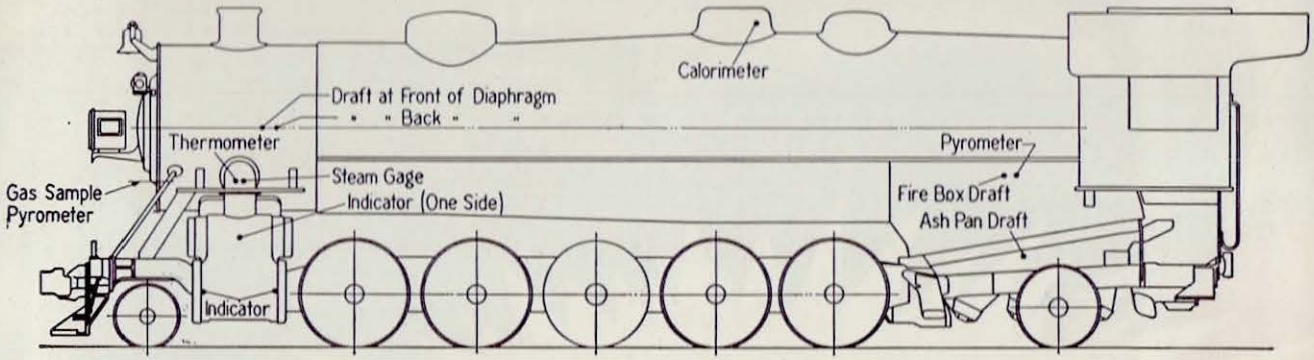
THE STEAM LOCOMOTIVE

By RALPH P. JOHNSON, M. E.

Chief Engineer, The Baldwin Locomotive Works



This is a complete treatise on the theory, operation and economics of the American steam locomotive. It is based upon current practice and recent research and material that has been tested out by the author and his co-workers. Comparisons are drawn with Diesel-electric and other types of motive power.

The author is a recognized authority on locomotive design, construction and testing. His experience in testing locomotives here and abroad with the aid of dynamometer cars is drawn upon for interesting observations on road testing methods.

To keep the subject matter as short as possible it has been stripped down to fundamentals, with just enough background included to indicate paths of development. The many tables have been checked against latest available data and the line drawings have been specially made for this book.

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Please send me a copy of R. P. Johnson's new book, THE STEAM LOCOMOTIVE, on 10 days' free examination. I will either remit the list price of $3.50 or return the book postpaid.

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R. A. 10-17-42

Table of Contents

Locomotive Classification—Locomotive Fuels—Combustion—Front Ends—Locomotive Cinders—Water for Boiler Use—Evaporation—Superheat—Tractive Force—Horsepower—Resistance—Tonnage Rating—Curves—Valve Gears and Valve Setting—Counterbalancing—Acceleration—Torque Diagrams—Locomotive Testing—Dynamometer Cars—High Speed Trains—Streamlined and Light Weight Trains—Motive Power for High Speed Service—Motive Power for Switching Service—Relation of Locomotive Operating Expense to Net Operating Income—Locomotive Repair Costs—Economic Life. Appendix A—Locomotive Testing Apparatus. Appendix B—Derivation of Economic Life Formula. Appendix C—Typical Locomotive Dimensions.

502 pages, 100 drawings and photographs, 70 tables, 6 x 9, cloth, $3.50

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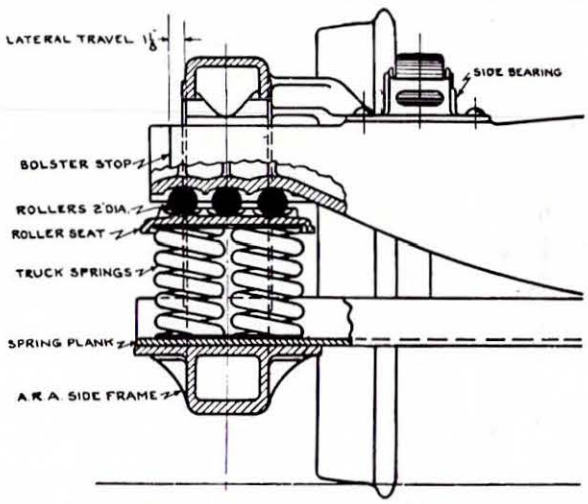
Can be Controlled By Rollers



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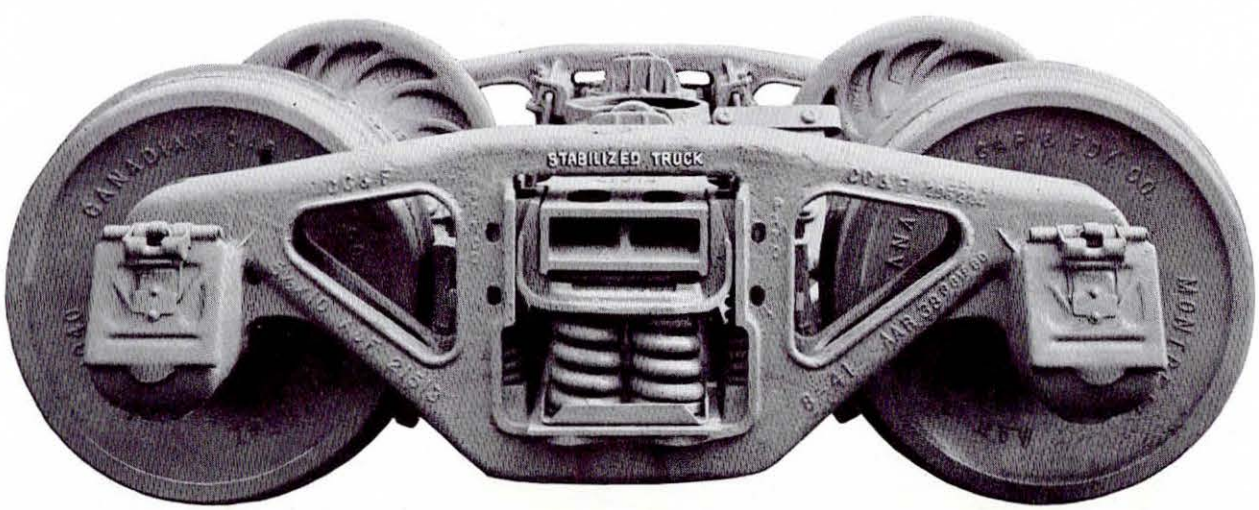

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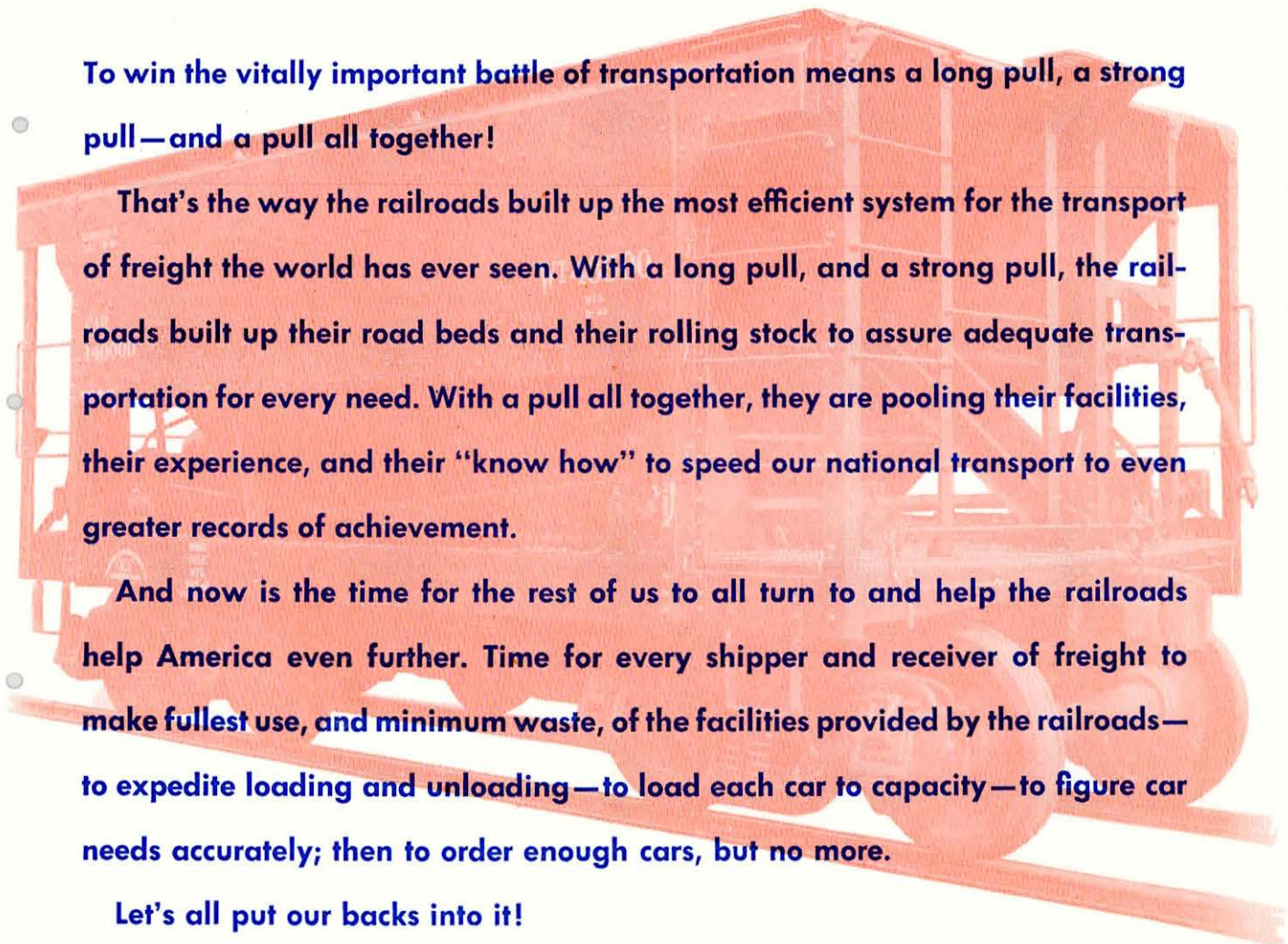

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That's the way the railroads built up the most efficient system for the transport of freight the world has ever seen. With a long pull, and a strong pull, the railroads built up their road beds and their rolling stock to assure adequate transportation for every need. With a pull all together, they are pooling their facilities, their experience, and their "know how" to speed our national transport to even greater records of achievement.

And now is the time for the rest of us to all turn to and help the railroads help America even further. Time for every shipper and receiver of freight to make fullest use, and minimum waste, of the facilities provided by the railroads—to expedite loading and unloading—to load each car to capacity—to figure car needs accurately; then to order enough cars, but no more.

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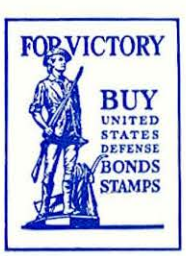

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In action as well as in hundreds of camps, bases, forts and depots, Teletype is saving vital time for the Army, Navy, Coast Guard and Marines.

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IMPROVED

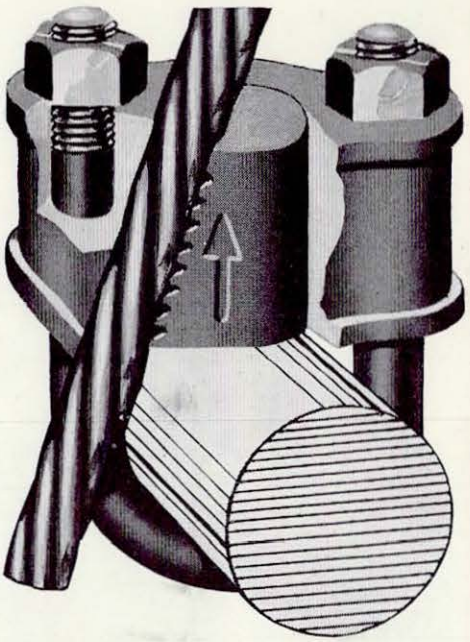
Universal BRAKE BEAM SAFETY SUPPORT

A. A. R. Approved Equivalent Design

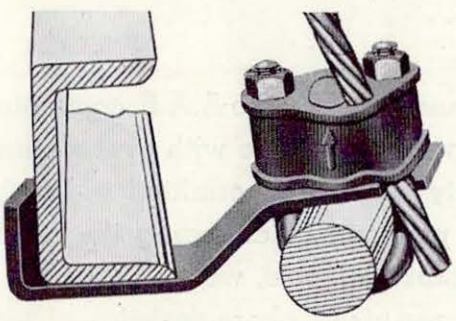
A notable contribution to operational safety and efficiency! Right from the start preferred for its many advantages UNIVERSAL BRAKE BEAM SAFETY SUPPORT has now added vital features for even greater convenience, safety and economy.

The new design simplifies installation, permitting adjustment to meet varying truck conditions. One man with a wrench can install it wherever a car may stand under blue flag protection. No drilling, no weakening of spring-plank. It requires minimum maintenance, has no moving parts.

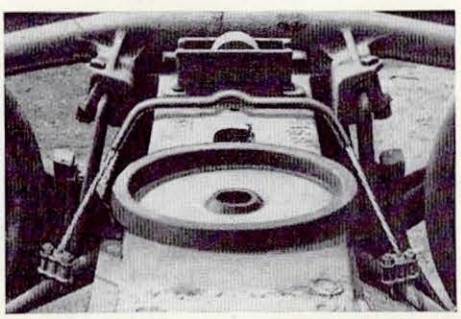
Essential defense materials are moving in an ever increasing volume on the rails. Delays anywhere, for any cause endanger our National security. They MUST be prevented! The NEW IMPROVED UNIVERSAL BRAKE BEAM SAFETY SUPPORT will help perform this notable service. It protects the danger zone of brake equipment and in case of brake hanger failure prevents derailment.



Tightening of Grip Unit Nuts on "U" Bolt securely locks wedge and cable in position



Compression-member guard (optional)



View of installation on free truck

Descriptive folder with complete information and illustrated installation instruction sheet will be sent promptly upon request. Large wall chart for shop use available.

GRIP NUT CO.

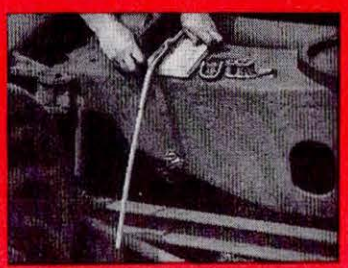
310 S. Michigan Ave. **Chicago, Illinois**

It's Adjustable!

Only one size needed for most truck types. Serves equally well as original equipment and as a replacement.

A simple nut-wrench and an ordinary plank of the right thickness (specified in installation sheet) to obtain correct clearance, is all that is needed. Fitting moves freely on cable to desired position and stays there securely, when wedge-locked.

FOUR EASY OPERATIONS:



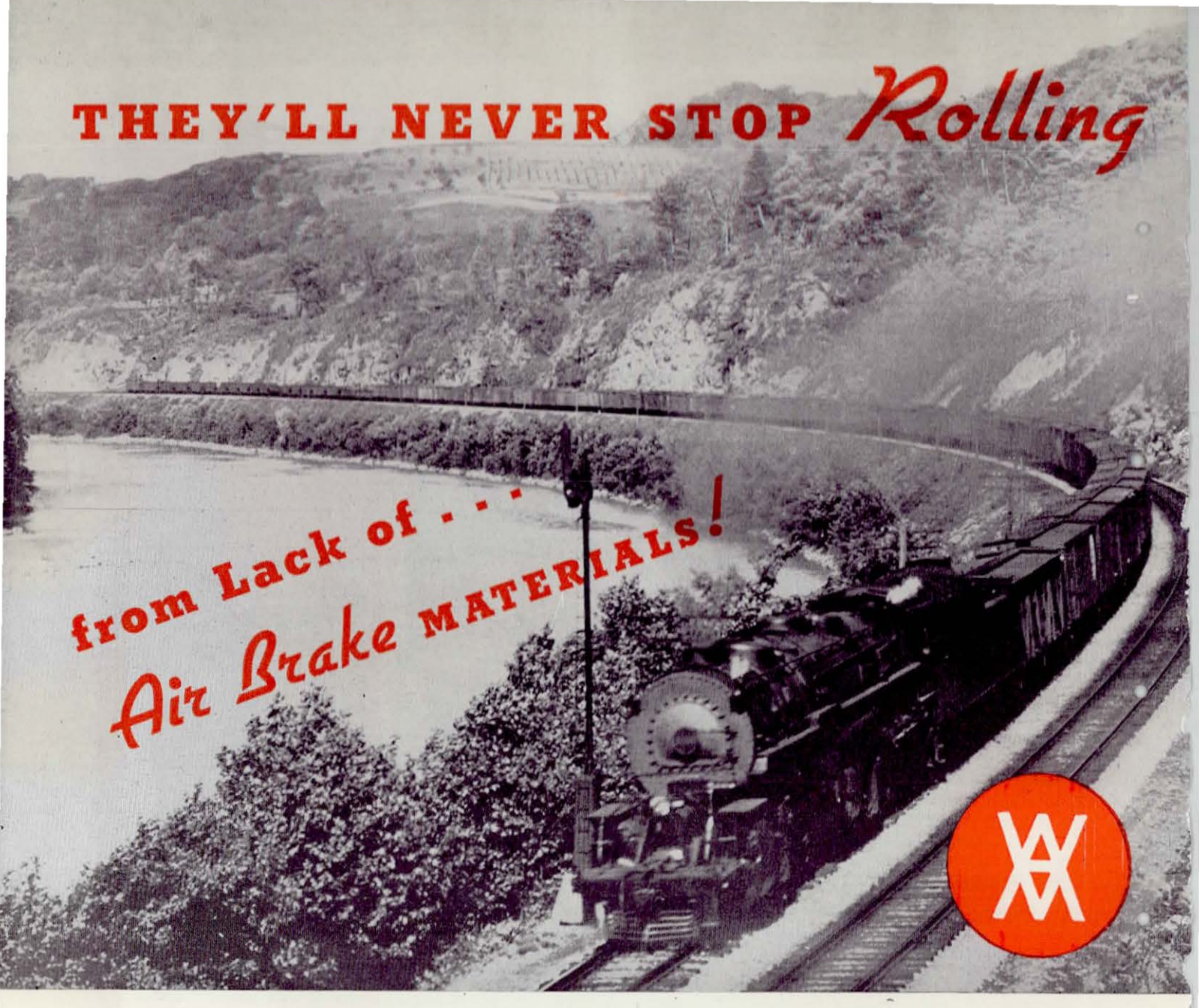
Place cable over block for clearance.

Slip housing on cable, insert wedge from below.

Place U bolt around tension rod, draw up Grip Unit Nuts.

Remove block after fittings are set on.

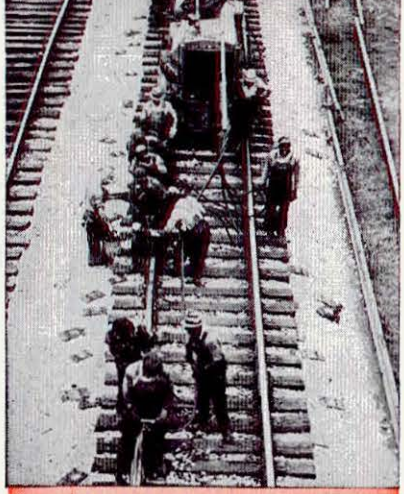
THEY'LL NEVER STOP *Rolling*



SUCH is our purpose — such is the objective on which our talents are focused, our facilities concentrated • We too have gone "all out" in our endeavor to keep supply lines moving so that safe, reliable railroad service may continue uninterrupted. This has entailed careful planning, the exercise of our every resource • In the common effort to conserve critical materials, we have made substitutions, redesigned the form of many details, changed processing. Every modified part has been proved by laboratory tests, its use sanctioned by the A.A.R. committee. Nothing that would interfere with over-all functional integrity has been permitted • By this conservation program in changing the nature of less important elements, we are enabled to preserve the required characteristics of vital parts, maintain regular production (along with extensive war work), and keep air brake apparatus coming to you as NEEDED • We are resolved to fulfill our responsibility in helping to prevent the arrival of "too little, too late".

WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA



PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA, PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK, N. Y., AND 105 W. ADAMS STREET, CHICAGO, ILL.

WASHINGTON, D. C.: 1081 NATIONAL PRESS BUILDING. CLEVELAND: TERMINAL TOWER. SEATTLE: 1038 HENRY BUILDING. SAN FRANCISCO: 300 MONTGOMERY STREET, ROOMS 805-806. LOS ANGELES: 530 WEST 6th STREET.

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SUBSCRIPTIONS, INCLUDING 52 REGULAR WEEKLY ISSUES, AND SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME IN NEW YORK, OR IN PLACES OTHER THAN NEW YORK, PAYABLE IN ADVANCE AND POSTAGE FREE. UNITED STATES, U. S. POSSESSIONS AND CANADA: 1 YEAR, $6.00; 2 YEARS, $10.00; FOREIGN COUNTRIES, NOT INCLUDING DAILY EDITIONS: 1 YEAR, $8.00; 2 YEARS, $14.00. SINGLE COPIES, 25 CENTS EACH. H. E. McCANDLESS, CIRCULATION MANAGER, 30 CHURCH STREET, NEW YORK.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

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★

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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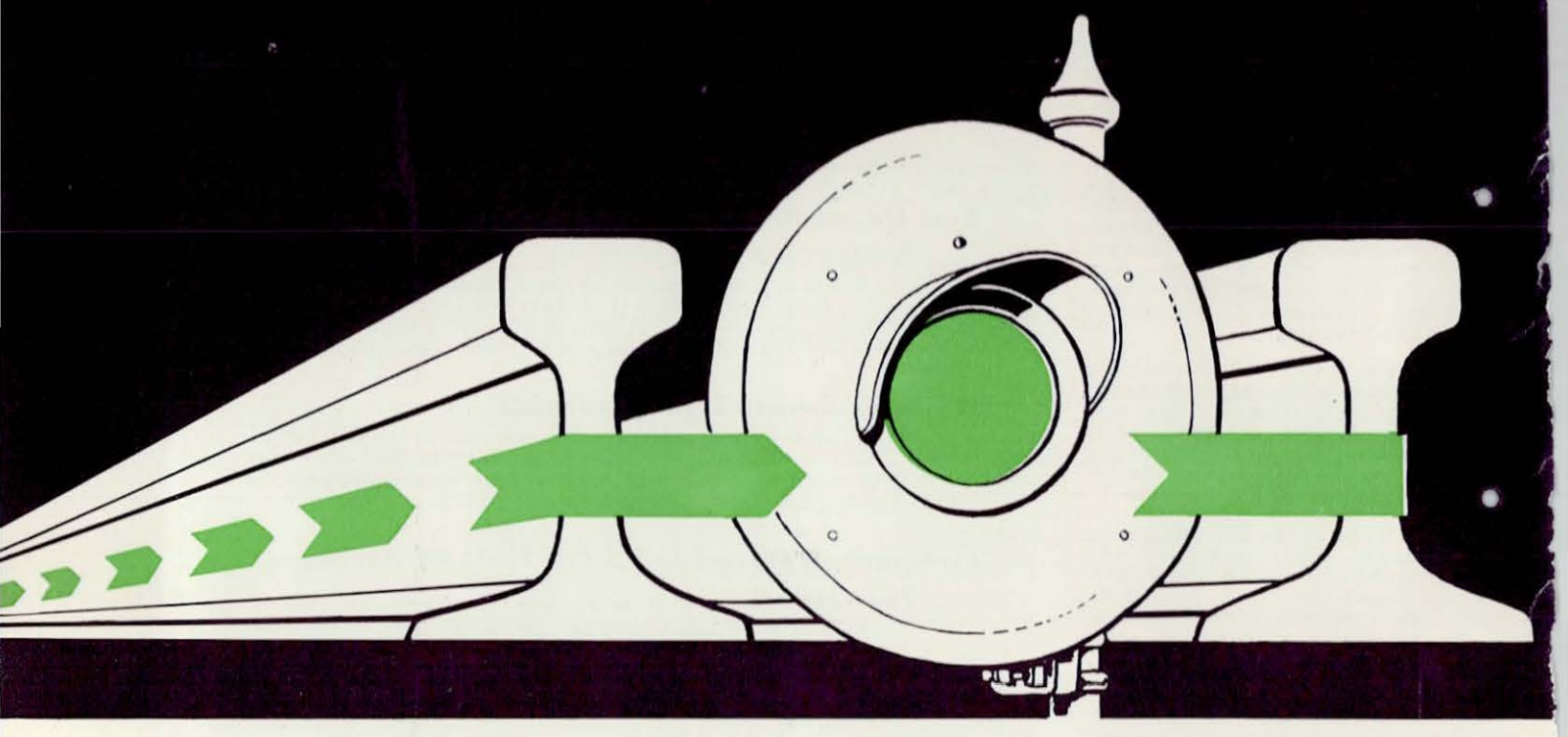
"UNION" CODED TRACK CIRCUIT CONTROL

provides rail-transmission of controls for 3, 4 or more aspect signaling!



Typical code and signal indication combinations

G R	CLEAR CODE
Y G	APPROACH MEDIUM CODE
Y Y	ADVANCE APPROACH CODE
Y R	APPROACH CODE
R R	NO CODE

MOST of the installations of "Union" Coded Track Circuit Control have been made in territories where the signals were respaced to provide ample braking distances for two-block, three-indication signaling. A greater number of signal controls are available, however, through the simple provision of additional rail-transmitted code frequencies as indicated in the accompanying table, to provide multiple-aspect signaling when required. For example, in one installation the density of traffic required the use of four-block signaling to provide necessary track capacity and sufficient braking distances in approach to closely spaced interlockings.

UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

HARMFUL "RECIPROCITY": The kind of competition the railroads will be up against after the war will call for the most efficient equipment and materials with which their manufacturers can supply them. In a sense, post-war transportation competition will be *a rivalry between manufacturers*—those who supply the railroads, on the one hand, and, on the other, the suppliers for other agencies of transportation. How can railways and railway manufacturers assure themselves that the railway end of this competition will be most effectively armed? An editorial herein contends that free competition on a basis of price, merit and merchandising by railway manufacturers for the railway market is the only way to maximize the railway post-war market for equipment and materials. "Reciprocal buying" and other such uneconomic competitive devices will work to the long-run disadvantage of both the railroads and their suppliers, including the companies which indulge in such practices.

●

COMMERCIAL SOCIALISM: Some of the "public aids" briefs filed with the Transport Study Board last week would make eye-opening reading to anybody who had thought that business interests in this country were opposed to government paternalism and further socialization of the economy. As an editorial herein points out, several of these briefs *from commercial interests* are strangely parallel in substance to the arguments of New Dealers who want to "plan" the whole economy, and charge most of the expense to general taxation (i. e., "production for use and not for profit"). True, these brief-writers restrict their socialistic advocacy to only *a percentage* of transportation. But if 10 per cent, why not 100? And if one economic service—transportation—is to be paid for out of taxes, why not provide other, and eventually all, economic services in the same manner? These gentlemen have certainly let the camel's head get under their tent.

●

HEAVY LOADS IN SAFETY: Heavier loading, to comply with ODT Order No. 18, has occasioned misgivings lest the heavier loads cause increased damage to lading. An editorial herein suggests that greater hazard to freight is not a necessary result of capacity loading, and it enumerates practical steps which may be taken to avoid this danger.

●

DEADHEAD TON-MILES: In the first six months of 1942 the railroads moved almost 22 billion ton-miles of their own freight. This was 15 per cent more deadhead ton-miles than in the first half of 1941. However, the ratio of free freight to pay load declined—the percentage being 7½ in the first half of this year and 9.1 in the similar 1941 half.

●

TRAVEL RATIO RISING: In June, coach passengers totaled 48 per cent more than in June, 1941, and sleeping and parlor car customers were up almost 70 per cent. For the first five months, the corresponding ratios of increase were 30 and 57 per cent. Passenger business, in short, is not only increasing—but the ratio of increase is rapidly mounting. Attention is drawn to this significant condition in the monthly summary statement of the I. C. C. Bureau of Transport Economics and Statistics, reviewed in this issue's news pages. Operating revenues are running well ahead of 1929, but net railway operating income is still below the '29 level.

●

ANOTHER N. H. PLAN: The I. C. C. has issued a third supplemental report on the reorganization of the New Haven (as reported in the news pages herein). The most recent revision adheres to the previously-prescribed capitalization—365 millions—and continues to leave the equity-holders out in the cold. Charter obligations to operate passenger service on Old Colony lines are required to be removed—although the road is obliged by the order to continue such services unless the losses exceed a certain "critical figure." Unless the Massachusetts legislature amends the New Haven's charter to this effect, the I. C. C. insistence that the road operate this passenger service will terminate. Holders of new preferred will control the directorate of the reorganized company at the outset, and at any time thereafter preferred voting power is augmented when dividends are in arrears.

●

ORDER NO. 18: The revised ODT minimum-loading order is reviewed in the news pages herein—to become effective November 1. An important change from the original order is that stenciled capacity, rather than "load limit," is one minimum (the other being cubical capacity—which, according to one definition, extends from the floor to 18 in. from the roof). Shippers are allowed one stop-in-transit.

●

TRAVEL NEEDS LEVELING: Fifty-one per cent of railroad tickets are being sold on Friday, Saturday and Sunday and 21 per cent on Saturday alone. The leading editorial herein points out that more people could be handled, and with less congestion, if the load were distributed more evenly. Also, some trains are running exceptionally heavy, where other trains serving the same areas are available with plenty of space on them. Our suggestion is that co-operative effort be exerted, diplomatically to direct travel to the runs where room is still left to accommodate the customers.

●

MASS - PRODUCTION BRIDGES: Thirteen highway bridges on the New Haven's 4-track main line have been renewed under a program which first assembled single-track units in advance—complete even to ballast and ties. Two bridges over streams were likewise involved in the project which is described and illustrated elsewhere in these pages. The job was undertaken before material got too scarce—and resulted from the management's foresight of the load the war might place on its main line; and from prompt forehandedness in dealing with the situation.

ABANDONMENT "CONSPIRACY": The WPB is acting in "conspiracy with the A. A. R. and the railroad bankers" in requisitioning rail from unprofitable branch lines—and enabling the carriers to junk these lines without the customary I. C. C. procedure. Such was the charge made by a B. of R. T. spokesman at hearings on the WPB branch-line-requisitioning program being conducted by Senator Johnson (D., Col.), reported in the news pages herein. Julius Luhrsen doesn't like these "quickie" seizures either; he thinks railroad employees can spot all the rail the WPB wants with but little, if any, need for abandonments.

●

T. P. & W. DISPUTE: The National War Labor Board has handed down a ukase stipulating that the Toledo, Peoria & Western—now operated by the ODT—be not returned to its owners unless these latter accept "standard" wages, and working conditions agreed to in July by the ODT management and the transportation unions, whose strike last winter led to federal seizure. Meantime, President McNear has issued a statement accusing the federal management of applying "featherbed rules" on this property. In reply to an inquiry from us, Federal Manager Barriger has denied Mr. McNear's charge (as reported elsewhere herein)—saying that the T. P. & W. has, in fact, abolished "penalty" payments which Mr. McNear countenanced. He adds that the railroad, despite higher wages, is running longer trains and is earning more operating net than ever before in its history. The "dual basis" of pay is prescribed by the Adamson Act, in Mr. Barriger's opinion.

●

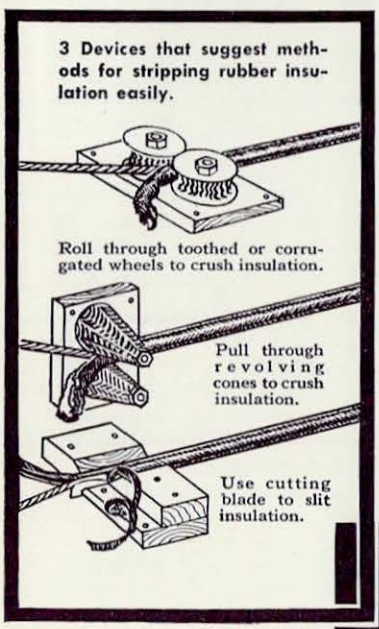
RR BUSINESS RESEARCH: What are the questions to which the railroads need accurate answers regarding their present and probable future *economic* (as contrasted with their technological) position? How can the carriers go about getting the answers to these questions? An experienced railroad engineer spent an academic year under the auspices of Massachusetts Institute of Technology studying this problem—and the result of his investigation appears, in digest form, in an article elsewhere in this issue. In his study, the author examined methods of such investigation *in actual use*, and his conclusions are thus based on practical experience.

●

GREETS NEW EMPLOYEES: Each new employee of the New York Central System is receiving a letter of welcome from President F. E. Williamson. The newcomer is invited to ask questions of his fellow-employees and supervisors, the better to acquaint himself with his new duties. He is reminded of the vital factor which railroading is in winning the war—and how necessary it is for all railroaders to work hard to that end. Mr. Williamson also suggests that the future of the railroad after the war may largely depend upon the efficiency and courtesy with which it serves its customers during the war. The letter is reproduced in the news pages herein.

DON'T!

that Rubber Scrap is Priceless!


3 Devices that suggest methods for stripping rubber insulation easily.
Roll through toothed or corrugated wheels to crush insulation.
Pull through revolving cones to crush insulation.
Use cutting blade to slit insulation.

3144

The rubber insulation of wire and cable is even more valuable today than the copper conductor, scarce as copper is! Saving vital copper is absolutely necessary, of course, but the rubber in wire and cable insulation is priceless. The rubber shortage is so acute that immediate corrective measures in both military and civilian life have become necessary. So get into the scrap and salvage both copper *and* rubber.

Okonite cords, cables and insulations have extra years of service built into them. Get these extra years of service by using every precaution for their protection and longevity.* But, if they can no longer be used, *strip* off the rubber insulation and sell it to a licensed rubber dealer and sell the copper conductor to a metal dealer.

The scrap you save here and now may later become the difference between victory and defeat on some far-flung battlefield.

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Efficiency FOR VICTORY

More Even Distribution of Passengers

Since April the railways and Pullman Company have been handling well the largest passenger traffic in history with one-third less cars than were available in the previous peak year 1920. There has been, however, some crowding of trains. The increase in traffic doubtless will accelerate after nationwide restrictions on the use of automobiles are imposed by Rubber Director Jeffers. But travelers and railways, by better co-operation, can enable the railways to handle many more passengers without great inconvenience and discomfort.

Many assume that the greatest increase in travel by rail has occurred in eastern territory, where rationing of gasoline has been in effect for some months and there has been so much travel to Washington. The facts are widely different. In June—the latest month for which complete statistics are available—the two years' increase of 106 per cent in travel by rail in the country as a whole since June, 1940, had been divided as follows: Eastern district, 75 per cent; Western district, 110 per cent; Southern district, 226 per cent. The increases in the eight regions of the country had been: Northwestern, 51 per cent; Great Lakes, 59 per cent; Central Eastern, 81 per cent; New England, 89 per cent; Central Western, 110 per cent; Southern, 224 per cent; Pocahontas, 237 per cent; Southwestern, 239 per cent.

Military training camps and other war activities have been established principally where they would not be remote from ports and the winter weather is mild; and the figures show that the increases in travel by rail have been in proportion to the increases in military activity in the various regions.

The Office of Defense Transportation recently issued a statement showing that 51 per cent of railway tickets were being sold on Friday, Saturday and Sunday, and 21 per cent on Saturday, and urging the public to reduce the week-end peak by beginning more trips on Monday to Thursday. Another fact of great importance is that there are still good trains in every region that are running almost daily with empty seats and berths. The public has been so well sold that service on some railways is better than on others, and on some trains of each railway better than on its other trains, that many travelers try first to get on the best-advertised trains, and, failing in that, to get on the best-advertised railways.

This tribute to superior service and advertising can be an embarrassment now, when the problem has become that of handling the maximum passengers possible with a minimum of discomfort and complaint. The railways have co-operatively suspended competitive advertising. They should also co-operatively adopt measures diplomatically to discourage excessive demands upon some trains and to encourage use of others that are running light in the same territories on their own or other lines. And passengers should help by willingly using other trains when their favorite trains are being overloaded.

The problem of distributing travel less unevenly cannot be tackled too soon by the railways co-operatively, with the support of press and public. For most of the regions in which new restrictions on the use of automobiles will soon be imposed are the very regions in which the largest increases in travel by rail already have occurred.

ODT Order No. 18

Opinion differs regarding the effect that O. D. T. order No. 18 will have on the safe transportation of freight. This order was issued on August 15 and was to be effective on September 15 but, because of shipper reaction, was modified and its effective date postponed to November 1. In general, the order prohibits the railroads from accepting for shipment, with certain exceptions, freight cars not loaded either to their stenciled capacity or their maximum practicable cubical content. The purpose of the order is to conserve motive power and equipment.

The danger of excessive damage to freight is the main argument advanced in opposition to the order. However, the underlying causes for damage are few and can be avoided. The assumption that it is impossible to load heavily and safely is erroneous, for heavy loading is not new and the record of claim payments shows that damage is not a corollary of heavy loading. Failure to adjust containers, loading and stowing to the requirements of heavier loading will lead to increased damage. Corrective measures are simple, however. The adequacy of containers has been a matter of dispute for years, but progressive shippers have studied their container problems and have corrected structural defects with little or no added cost.

The modernization of shipper and railroad loading and stowing methods will do more to eliminate damage than any other one factor. Early experience, for example, indicated that freight moved more successfully when containers were loaded end to end and this led to the general practice of loading all containers the long way. As the corrugated paper carton displaced the wooden box, the method of loading was not changed to meet the new conditions until after 1925 when higher train speeds were accompanied by an increase in broken packages of fresh fruits and vegetables. Experiments then indicated that the crosswise loading of these commodities greatly reduced breakage and as a result this method of loading has lately been applied to corrugated and other types of containers with success. More recently the break-joint method of loading containers, whereby each container rests on two containers beneath it, has been adopted with success by some progressive shippers.

In stowing l. c. l. freight, one problem is to guard against its movement, not only from end to end but up and down and sideways. As a general rule merchandise loading is started at one end of the car, without regard to the kind of freight, and heavy freight frequently moves against cartons and light objects with crushing results. Furthermore, heavy packages and objects are supposed to be placed on the bottom but not infrequently, due to haste or indifference, heavy articles are placed upon fragile ones.

Under present conditions and in the interest of the car utilization program, the stowing of merchandise freight might well be started at one side of the car rather than at one end and the other side be reserved for such heavier freight as barrels, drums, boxes and crates, the same procedure being followed in the other half of the car, with the light and heavy sides reversed to balance the load. Side loading also provides better opportunity for stowing long pieces of freight and enables stevedores to place long boxes on their sides rather than on end, as is often necessary under present methods. Still another phase of stowing which should be given consideration is the filling of the doorway, for the doorway of a heavily loaded car must be filled fully or damage will result from the pressure from both ends of the car. Gates or bulkheads are effective in holding loads at doorways.

Consorting with the Enemy

The thought must be frequently recurring to most business men, including railroad men: "How much of the freedom we have yielded to government in order to win the war will we get back when the war is over?" The answer is not difficult or uncertain: Business will get back its freedom in such proportion as it is able to convince the public that it can do a better job of providing remunerative peace-time employment than the government can if it retains direct control of the economy.

The formula for restoring freedom (thereby saving the country from the very absolutism we are fighting to defeat) is, thus, simple to state—but not so easy to put into effect. Business in the 'Twenties and the early days of the Great Depression gave a concrete demonstration of the errors inherent in business policies which dominated that period. What changes have occurred in business policies and practices since the early 'Thirties, capable of persuading the public that business leadership now knows how to avoid protracted depressions?

Such evidence is not lacking, but there is no profusion of it. The business practices which helped induce the Great Depression and delayed recovery from it included high tariffs, subsidy-seeking and monopolistic pricing—in short, efforts by businesses to advance their particular interests by the methods of politics. When business and industry resort to politics for special favors, they encourage other groups to do the same—groups which, incidentally, are far more effective politically than business is.

There could hardly be more convincing or more discouraging evidence of the failure by a large segment of business to recognize and seek to overcome the debilitating vice of playing politics than some of the "public aids" briefs filed last week with the Transport Study Board (*Railway Age*, October 10, page 577). Here were spokesmen for substantial industrial and commercial interests seriously contending that *a large part of the costs of highway transportation represent a benefit to society and should properly be defrayed by general taxation rather than wholly by the direct beneficiaries.*

This argument is the very essence of socialism and governmental absolutism. There is some degree of specious plausibility to it, of course. But, if this course is accepted for highway transportation then, in the long run, competition will force its application to the railroads (as is, in fact, recommended by the National Resources Planning Board). If this argument is valid for transportation, then it is equally so for food, shelter, clothing and every other economic utility. If general taxation (i. e., government intrusion in the economy) is to pay, say, 10 per cent of the costs of highway transportation—why not 20 per cent, or 50 per cent? Why not 100 per cent? And why not similar enlargement of the sphere of government, beginning with a small fraction and working up to totality, in all economic life?

We do not suggest that the writers of these briefs are conscious socialists. They are merely self-seeking opportunists—like the high tariff and price-maintaining monopolists who gave us the Great Depression, and the excuse the Big Government advocates were looking for. If private business were true to its *principles,* this "public aids" question would not have to be argued before a government board. The dispute would not have arisen. The catastrophe of permanent government domination of the economy, if it comes, will be in large part ascribable to the *abdication* by private business—through refusal to obey the known laws of its own being.

Post-War Competition

The usual competitive relationship between buyers and sellers in the railway field are largely reversed for the duration, because the railways are now in more need of equipment and materials than most of the manufacturers from whom they usually get them are in need of orders. But the situation will quickly be reversed to normal when the war ends and manufacturers lose their war orders. And the railways will then be confronted with revived competition between themselves for traffic, and probably with tougher competition from other carriers than they ever have had. They will want to hold much of the traffic diverted to them during the war from coastwise vessels, the highways and the airways; but they will have to fight for it and for much of their other traffic; and to fight successfully they will have to render the best service practicable at the lowest operating costs and rates practicable.

Railway service and operating costs always have depended largely upon the quality, efficiency and cost of the equipment, devices and materials furnished by manufacturers. These, in turn, have been largely determined by the *intensity* and *kinds* of competition for railway business among manufacturers. The record of efficiency the railways have made during the last two years reflects credit not only on them and co-operating shippers, but on the manufacturers who have supplied them.

There are, however, as already indicated, different *degrees* and *kinds* of competition for business from the railways, as for business from other sources. It should always be competition in improving products, and in advertising and selling them on their merits as respects utility and price. Only by such competition can manufacturers contribute their utmost toward the progress in efficiency and economy that the railways always have had to make, and that they will especially need to make after the war.

There are competitive methods that do not meet this specification. One of the most important is so-called "reciprocal buying"—the use by railways of their purchases to get traffic, and the use by manufacturers of their own and other people's traffic to influence purchases. When traffic is secured by the influence of purchases, it is secured largely regardless of the quality of the railway's service. When sales are made by the influence of traffic, they are made largely regardless of the quality of the products sold. Therefore, the tendency of "reciprocal buying" to discourage progress both in improving railway service, and in improving the products sold to railways, is plain. And the latter effect is more important than the former, because competition of other carriers will stimulate improvements in railway service after the war, as it did during the last decade.

And there, in fact, is the rub. For the railways were not very successful in meeting this outside competition before the war; lost huge amounts of traffic and earnings because of it; and, in consequence, had greatly to reduce their purchases from the railway equipment and supply manufacturing industry. Is all this going to happen again after the war? That will depend upon how effectively the railways compete with other carriers; which, in turn, will depend largely upon how intensively and effectively railway equipment and supply manufacturers compete with *one another,* and with *manufacturers for other carriers,* in improving transportation equipment, devices and materials.

The current remarkable performance of the railways should not be allowed to obscure the plain fact that the record made by them and by manufacturers for them, in meeting the *competition of other carriers and of manufacturers for other carriers* during the last decade and a half has been mainly a record of failure. And now, when both railways and manufacturers for them have abundant business is the best time for both of them to be diligently researching and studying all the reasons for this failure, and all the means by which a repetition of it may be avoided in future.

And these means will *not* be found in practices discouraging the most intensive competition in the improvement of the equipment, devices and materials which so largely determine the quality and cost of railway service.

One of the New Girder Spans About To Be Lifted From a Flat Car to Its Final Position

New Haven Renews 15 Bridges on "Mass-Production" Basis

Through-girder spans installed on four-track New York-New Haven line were assembled in advance as complete single-track units

BRIDGES were renewed on a "mass-production" basis on the four-track main line of the New York, New Haven & Hartford between New York and New Haven, Conn., in a recent program in which the existing spans across 13 highways or streets and 2 creeks were replaced with new structures. Aside from its extensive scope, this undertaking, which was completed just in time to avoid being affected seriously by the current scarcity of material, is worthy of mention for other reasons. Among these is the fact that, excepting the creek spans, the bridges were installed in the form of single-track units completely assembled in advance, even to the ballast and ties. In addition, again excepting the creek bridges, the new spans are of through-girder construction and, in the majority of them, the main girders consist of rolled beams.

All the bridges over highways that were renewed in this program were through-plate girder open-deck spans on sandstone masonry abutments, which had been built in the early 1890's at the time that the New York-New Haven line was converted from a double-track to a four-track line. Since the rating of the structure built at that time was about equivalent to Cooper's E-40 loading, the railroad decided several years ago that it would be necessary to replace them with structures more in keeping with present-day loads and speeds. The bridges involved in the renewal program are all located in 12 miles of the line between Bridgeport, Conn., and South Norwalk.

Incidentally, this program was undertaken during the early days of the war effort when the railroad foresaw the increased traffic and heavier loadings that would shortly prevail, and recognized the desirability of strengthening its properties wherever necessary so that it would be in a better position to handle its share of the burden. Subsequent events have proved this to be a far-sighted analysis of the situation.

Factors Influencing Design

The choice of a design for the new spans was influenced by a number of factors. In the first place, as a means of simplifying the work of installation and of reducing interference with railroad traffic to a minimum, it was desired to adopt a design that would permit the bridges to be assembled in advance in the form of complete single-track units and set into position, track by track, at the bridge site as the old spans were removed. Another important consideration was the fact that the tracks at all the bridge sites are on 12-ft. centers, and it was desired to adopt a design for the bridges that would meet the present track spacing and also permit a future respacing of tracks without reconstruction. Also, it was desired to hold any track raises at the bridge sites to a few inches at the most, and this meant that, to maintain the existing underclearances at the street bridges, the decks at most locations would be limited to a depth of about 3 ft. between the top of rail and the underside of the steel. It should be mentioned that all the bridges involved were single-span structures, that the lengths of the spans between end bearings ranged between 28 ft. and about 50 ft., and that the existing

sandstone abutments, repaired and altered as necessary, were to be utilized for supporting the new spans.

Giving consideration to all these factors, a design was adopted for the street bridges that is sometimes referred to on the New Haven as the "bathtub" type. Briefly described, this is a ballast-deck half-through girder design with a metal-plate deck, in which the span for each track is a self-contained unit in itself. Obviously, this type of design fulfilled the requirement that the new bridges be susceptible to preassembly and installation in single-track units; also the future spreading of the tracks would be a simple matter. Further, by confining the load on each girder to that imposed by one-half of each track, this design made it possible to use relatively shallow girders. Otherwise, that is, if the more common design for multiple-track structures had been adopted in which each girder in effect carries a full track, the girders would conceivably have been of such a height as to necessitate the spreading of the tracks somewhat to obtain the proper clearances.

Rolled-Beam Girders

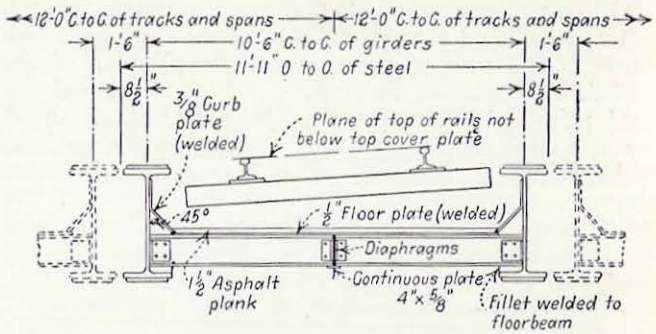
The girders in the new spans consist of rolled H-section beams, except that in two of the longer spans, where special conditions prevailed, built-up plate girders were used. In these instances, the use of girders with straight lower flanges would have necessitated a slight raise in the track grade at the bridges to obtain the desired underclearance. However, the presence of crossovers near the bridges rendered prohibitive the cost of raising them even a few inches. This problem was solved by cambering the lower flanges of the girders sufficiently to absorb the thickness of the cover plates, thereby avoiding the necessity of raising the grade.

The rolled-beam girders were used in spans up to about 40 ft. in length. For the most part, 36-in. 280-lb.

To Remove the Old Spans the Floorbeams Were Cut Through with Oxy-Acetylene Torches and the Parts Loaded on Cars with a Crane

beams were used, although in at least one case 36-in. 300-lb. beams, each fitted with a single cover plate, top and bottom, were employed. Where cover plates were applied to the rolled-beam girders, they were welded in place, using both fillet and plug welds. Also, these girders have welded stiffener plates at intermediate points, although the end stiffeners consist of riveted angles. The built-up plate girders are of conventional construction with riveted cover plates and stiffener angles throughout. In both the rolled-beam and built-up girder spans the stiffeners on the inner sides of the girders are of special steel to minimize the deteriorating effects of contact with the ballast. To permit the spans to be handled by cranes, the end plates of the girders were made to serve as lifting bales by projecting them somewhat above the top flanges and by providing a 4½-in. round hole in the projecting portion of each plate. After the bridges had been installed, these plates were burned off flush with the top flanges.

Aside from the fact that the main girders consist of rolled beams in some of the new spans and built-up


12'-0" C. to C. of tracks and spans
12'-0" C. to C. of tracks and spans
1'-6"
10'-6" C. to C. of girders
1'-6"
11'-11" O. to O. of steel
8½"
8½"
3/8" Curb plate (welded)
Plane of top of rails not below top cover plate
½" Floor plate (welded)
45°
Diaphragms
½" Asphalt plank
Continuous plate 4" × 5/8"
Fillet welded to floorbeam

Cross-Section Through One of the Spans With Rolled-Beam Girders, Showing Typical Construction

members in others, the bridges are essentially similar in construction in all other respects. About one-half of the spans are on skew layouts.

Deck Construction

In all the bridges, the floor systems consist of wide-flange beams, usually the 10-in. 45-lb. section, with riveted connections. Over these is a ½-in. deck plate of wrought iron or special steel with butt-welded joints, the welds being made by the step-back or stagger system to minimize distortion. The deck plates are also fastened by means of fillet welds along both edges of each floorbeam flange. Between the longitudinal edges of the deck plates and the girders, a space 8-in. wide is closed by means of a ⅜-in. curb plate, placed at an angle of 45 deg., which is of such a width and so formed that its upper portion lies flat against the girder web and extends to a level above the ballast line. This plate is butt-welded to the deck plates and fillet and plug-welded to the web of the girder. Protection is provided for the deck plates in the form of 1½-in. asphalt plank, laid in asphalt mastic.

Another feature of the new bridges is that, for a short distance at each end of each span, the space between the under side of the plate deck and the bottom flanges of the floorbeams is filled with concrete. This was done because the under surfaces of the floor system over the bridge seats would not be readily accessible for painting or other maintenance and covering them with concrete afforded a permanent means of protection. The spaces between the end stiffeners of the girders on both sides of the webs were also filled with concrete up to a level just below the top flanges.

The new spans were delivered to the railroad by the fabricator in the form of completely-assembled units, except that the deck and curb plates were not applied for short distances at the ends. These were omitted to permit the placing of the concrete in these portions of the decks by the railroad. As delivered, the spans were

sent to a central point relative to their final locations, where all necessary work was performed to get them in complete readiness for installation. This included the placing of the concrete in the decks at the ends and between the end stiffeners on the outsides of the spans. However, because pipe sleeves for receiving the upper ends of the anchor bolts were embedded in the concrete between the end stiffeners on the inner sides of the girders, it was necessary to wait until the spans had been installed to place this concrete so that the sleeves could be located accurately with respect to corresponding sleeves embedded in the bridge seats. In the sections of the spans where the decks were filled with concrete, a ½-in. bottom plate of special steel was welded to the undersides of the floorbeam flanges.

Other preparatory work that was performed by the railroad included the welding on of the deck and curb plates at the ends of the spans; the application of the asphalt deck planks, the ballast and the ties; and the field painting of the spans. The specifications called for one shop coat of red lead (except on the surfaces to be welded or to be covered with concrete), and over this a coating of emulsified asphalt was applied in the field, except that the facias and the under surfaces of the decks were painted with black bridge paint. As the final step in preparing the spans, they were loaded on flat cars for transportation to the site of installation.

Method of Installation

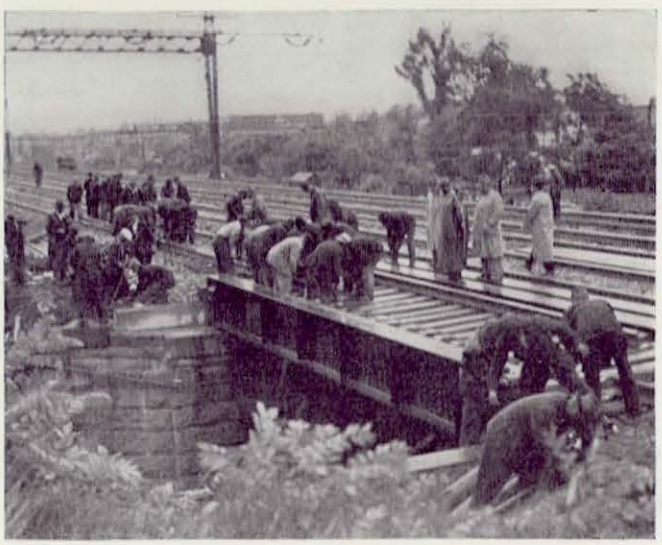
The work of installing the new spans was carefully organized to the end that interference with traffic would be reduced to a minimum, with the result that at no time were more than two tracks out of service at any given location. The procedure that was followed when renewing a given bridge was to start with the span under the most southerly track (the eastbound passenger track) and install the new spans one by one progressively across the tracks.

First, the track carrying the span to be renewed and the next adjacent track were taken out of service, and the power in the overhead carrier wires was cut off, this being an electrified line. Next, the rails and ties were removed from the old span, and short sections of rails were installed to even up the tracks at the ends of the bridge to permit the approach of the cranes that were used in handling the old and new spans. Using oxy-acetylene torches, the anchor bolts of the old span were cut off and the floorbeams were cut through near the inside girder. This permitted the outside girder and the floorbeams of the old span to be lifted out as a unit by a crane and deposited in a car on the adjacent track. To install the new span, the flat car containing it was spotted on the adjacent track and two 150-ton locomotive cranes were used to set it into position on the abutments. The only remaining step necessary to the restoration of service over the span was the replacing of the track rails.

The same procedure was followed in renewing the remainder of the spans at any given location. In placing the first three spans, it was necessary in each case, because of the presence of the girder of the adjacent existing span, to offset the new span 6 in. from its final location. After the fourth span had been placed, the other three spans were jacked over to their final positions. When taking out the fourth span at any location, the floorbeams were cut through midway between the girders and the span was removed in approximately two equal parts. As a protective measure, the spaces between the ends of the new spans and the backwalls of the abutments, and between the girders of adjacent spans, were filled with asphalt mastic.

52 Individual Spans

Since the program entailed the installation of 13 four-track street bridges, it is apparent that the procedure described above for installing a single span was repeated 52 times. Through frequent repetition of the same procedure, the forces performing the work of installing the bridges became highly proficient. As a matter of fact, it was generally the rule that the work of installing the individual spans required only about an hour from the time that the removal of the rails and ties from the old span was begun until the new structure was in place. However, owing to the fact that the delivery of some of the spans was delayed considerably, it was not possible to carry out the work of installing them as a continuous, progressive operation. Actually, this work extended over a period of about ten months.



When a New Span Had Been Set Into Position, the Only Remaining Step Necessary to the Restoration of Service Was the Replacing of the Track Rails

At the two locations where the program involved the replacement of bridges across creeks, the new spans are precast slabs, consisting of rolled beams encased in concrete. In these structures, which are both 37 ft. 3 in. long, there are two slabs for each track, and the outside slab in each side of the bridge has a curb for retaining the ballast. Each of the slabs was provided with four lifting loops, consisting of 1¾-in. rods, in its top surface to permit it to be handled by the cranes, and the method of installation was generally similar to that followed for the "bathtub" spans.

Substructure Work

At many of the locations where the new bridges were installed, the bridge seats of the existing abutments had undergone deterioration such as to require that repairs be made before the new spans were installed. Moreover, since the existing backwalls of the abutments were too high for the new spans, it was necessary that lower backwalls be provided. Generally, therefore, the work of each abutment consisted of the replacement of the bridge seat, the first course of masonry below the seat and the backwall, with concrete construction. When performing the masonry repair work, all of which was done

under traffic, the existing spans were supported on timber falsework bents placed against the faces of the abutments. However, a supplemental support had to be provided for carrying the tracks adjacent to the ends of the bridges while work was in progress on the backwalls, and the type of support that was devised for this purpose is worthy of mention.

For each track this support embodied eight 130-lb. stringer rails bolted together in pairs, there being a pair of these rails on each side of each of the track rails. At one end, the stringer rails were supported by means of blocking on the temporary bent and at the other end on a timber grillage placed in the embankment. Suspended from the stringer rails by means of 1¼-in. hanger bolts were a number of special cross-ties on which the track rails were carried. These ties were 10 ft. long and in two sizes—8-in. by 8-in. and 8-in. by 12-in.—which were placed alternately. A single hanger bolt was provided at each pair of supporting rails to carry each 8-in. by 8-in. tie; for each 8-in. by 12-in. tie there were two hanger bolts at each pair of rails.

Special washers were used for transmitting the load from the hanger bolts to the carrying rails, each of which was made from the base of a short section of 130-lb. rail; that is, a section of rail from which the web and head had been removed by cutting along a line at the base of the web. When used for supporting the 8-in. by 8-in. ties, the washers were 6-in. long and contained one bolt hole; for the larger ties they were 12-in. long and had two bolt holes. When placed bottom side up between a pair of stringer rails, these washers had an even bearing on the bases of these rails; also their top surfaces provided horizontal bearings for the nuts on the hanger bolts.

The bridge-renewal program described in this article was carried out under the general direction of E. E. Oviatt, chief engineer. The new bridges were designed under the direct supervision of F. J. Pitcher, engineer of structures and design, and were installed under the direction of G. W. Curtiss, division engineer. The work of repairing and altering the bridge abutments, preparing the new spans for installation, and of constructing the precast slabs for the creek bridges was performed under contract by the George F. Collins Company, Inc., New York. All spans were installed by company forces.

Wolmanized Lumber in Prefabricated Box Cars

THE Pullman-Standard Car Manufacturing Company is now in process of building 375 steel-framed, single-sheathed wood freight cars at the company's Butler, Pa., shops. The American Car & Foundry Company has an order for 175 cars of similar design. The cars are for the account of a South American government, and are representative of South American designs for 25-ton, meter-gage freight cars.

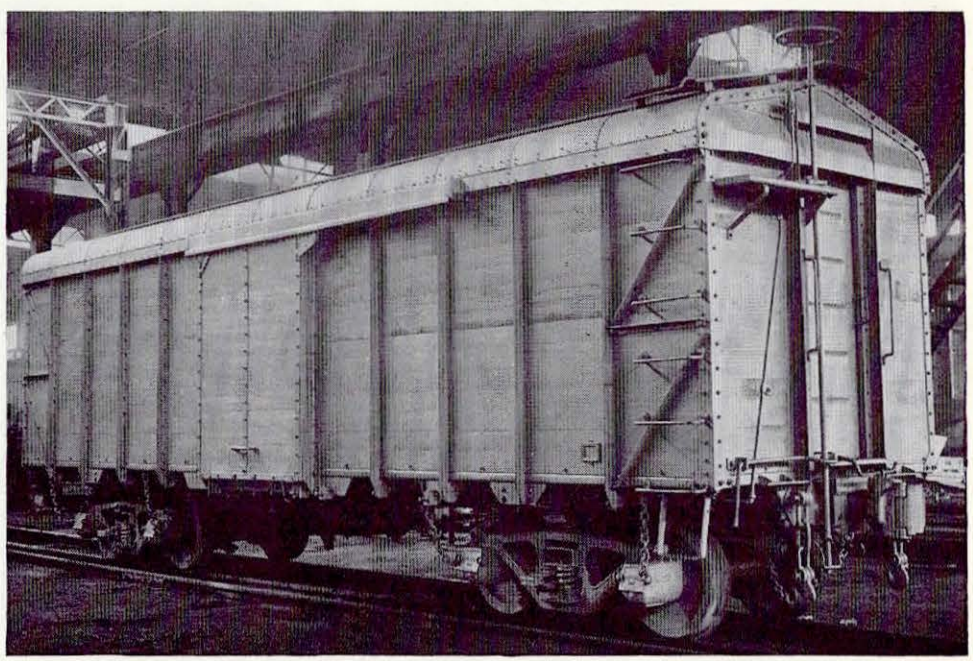
Following specifications of the customer's engineers, practically all of the wood in these cars has been pressure-treated Wolman salts preservative for protection against termite and decay attack, which tends to decrease the effective service life for freight cars. South American engineers report that this action is either prevented or greatly retarded by Wolmanizing, which has the additional advantage of being a clean treatment, permitting subsequent application of paint to the wood surfaces and also having no odor or other damaging effect on lading.

The retention of preservative in the lumber is 0.3 lb. of Wolman salts per cu. ft. of wood. Following treatment, the lumber was kiln-dried to a moisture content of 10 per cent. All lumber was supplied, machined, and cut to net length by the Wauna Lumber Company, Wauna, Ore.

The American Lumber & Treating Company's Wolmanizing cylinders are located adjacent to the lumber manufacturing facilities of this company.

The total treated lumber requirements for the 375 cars comprise 304,615 board feet of select Douglas fir, graded in accordance with A. A. R. specifications, Par. 53. The lumber was ordered cut to length, such prefabrication allowing faster construction, with resulting economies.

Although it is often found necessary to trim the cut-to-length material during the construction of freight cars, it is nevertheless a matter of cutting off only two or three inches, rather than several board feet, with no appreciable reduction in effectiveness of treatment at the ends of the lumber.



A Sample Box Car Made of Pre-Fabricated Wolmanized Lumber for a South American Government

Business Research for Railroads*

A search for the principles necessary for success in this work, based upon a study of methods in actual use

By George Rugge

FOR a long time railway executives have recognized the need for long-range economic planning, but immediate necessities have caused them to concentrate most of their time on short-term problems. Successful management has been demanding an increasing amount of fact accumulation and analysis. Now, the war has heightened the importance of advance-planning and has led railway managements to a renewed interest in business research. Various railroads have tried different systems of organizing their business research; some have been successful, other have not.

This survey assumes that no company possesses all the best ideas and practices, and that every company might benefit from the experiences and opinions of others. Therefore, an attempt has been made to ascertain the actual patterns of present-day methods of business research on the railroads. As a result of this study, a general pattern is proposed in the form of plans and principles to serve as a guide for revamping present methods along more effective lines.

What Business Research Investigates

Business research is concerned with such economic problems as company survival, finance, marketing, labor relations and public relations. In the manufacturing industries technical problems predominate, whereas in service industries managerial and economic problems predominate. The railroad industry was the first great service industry, and has, therefore, contributed more to managerial and economic techniques of business than any other industry.

In all successful businesses research has never been confined within a research department. Successful management has always based its policies on facts rather than preconceived opinions, and the officers have realized that research is not a substitute for management, but rather a helpful tool. The purpose of the companies or men imbued with the research attitude should be to assemble and present the objective evidence for decisions, plans and policies.

Business research can be conceived as conducted in a series of concentric areas. In the center is the individual enterprise. Around this is the area of co-operation for national industry (i.e., all the concerns in the same line of business); and around the industry as a whole is the area of the national economy. Encircling all is the great area of international business and trade. It is readily apparent that the areas are interdependent, and that part of the research in each area must consist of analyzing the activities of the other areas. Translating this analogy to railroad terms, three important areas are found: (1) the individual railroad company, (2) the national railroad organizations, and (3) the national economy. This report is concerned with the content, methods, personnel and organization of business research in the area of the individual railroad.

Types of Problems

Scrutiny of the economic problems of a railroad will disclose three distinct types of questions requiring the type of investigation which is called "business research." These three types of problems are I—internal, II—general policy and III—external.

I—INTERNAL PROBLEMS.—These deal with functions and situations over which it is possible for the company to exercise a reasonable degree of control. Research in these problems is largely for the purpose of servicing the various departments and divisions of a company. Details of the problems in this category are difficult to assemble, but the following instances will serve to exemplify them:

1. *Traffic and marketing problems:* Market studies (i.e., of the demand, actual or potential, for railroad transportation under varying conditions); advertising techniques; rate policies; consumer attitudes; sales methods; industrial development; agricultural development.

2. *Transportation service methods:* Cost analysis; equipment depreciation and obsolescence; terminal location; switching methods; maintenance methods; train operation; type and kind of motive power; kind of fuel; speed of traffic.

3. *Personnel and industrial relations:* Aptitude and attitude tests; fatigue studies; wage, employment and retirement plans; employee organizations and activities; death, sickness, and disability plans; merit rating, and job evaluation plans; selection and training of supervisors.

4. *Purchasing and stores:* Sources and prices of materials; purchasing methods; inventory control and storage; distribution of material; salvage operations.

5. *Accounting and statistics:* Machine methods; design of forms; means of co-operation with other departments.

II—PROBLEMS OF GENERAL POLICY.—Problems of general policy are those which deal with stewardship and protection of the company against external factors

* This article is an abstract of a report on an investigation in industry carried on by George Rugge, while on leave of absence from the Atchison, Topeka & Santa Fe Railway, as a recipient of an Alfred P. Sloan Foundation Fellowship for advanced study in administration at Massachusetts Institute of Technology.

The language of the original manuscript has, necessarily, been editorially altered here and there in preparing this much-reduced digest of Mr. Rugge's complete work. The effort has been made in every case to retain the meaning of the original, but the editor rather than the author (now in military service) is responsible for the wording of the present article.

It is planned to publish Mr. Rugge's complete manuscript as a book. Persons interested in purchasing copies thereof may obtain further information by addressing: Director, Sponsored Fellowship Program, Mass. Institute of Technology, Boston, Mass.

impinging upon the business. These problems may be classified as follows:

1. *Financing, investment and credit:* Changes in capital structure; investment in fixed assets; credit sources and costs; budget planning.
2. *Organization:* Comparative effectiveness of various departments; responsibility and control.
3. *Subsidiary companies:* Methods of financing, methods of control; methods of co-ordinating with parent company.
4. *Expansion and abandonments.*
5. *Competitive and co-ordination studies* (with other forms of transport).
6. *Reorganization.*
7. *Public relations.*
8. *Bringing in outside ideas.*

III—External Problems.—External problems are those over which the management exercies no control, but which need to be fully understood in order that the company's operations may be adapted to them. These problems are difficult to define in terms of specific railroad situations, but may be exemplified as follows:

1. *Economic conditions and trends:* Forecasting of business and economic conditions; industrial shifts; price movements; shifts in consumer preference; national income; shifts in international trade; production changes.
2. *Government relations,* policy and regulation.
3. *Technological changes in transportation.*
4. *Technological changes in other industries.*
5. *International policy.*

The lines between internal, general policy, and external matters cannot be clearly drawn, and it is in these twilight zones that some of the most difficult problems lie.

Evaluating Technological Changes

Business research measures the value of technological advances to given situations at given times. Some roads, for example, are faced with the problem of whether or not to adopt Diesels in place of steam locomotives. From the standpoint of mechanical efficiency the decision might be for the Diesel, but an analysis of the coal and oil revenues of the road might point to a different conclusion. The Diesel might give decreased operating costs but might result in reduced railway purchase of coal, and might cause the loss of considerable coal traffic.

On railroads, the technological phases of the business are confined primarily to the engineering, mechanical, test and signal departments. The effectiveness of their work is measured chiefly by their contribution to the efficiency of the operating department. Their technique is cost analysis and their goal is *economies, not economics.* This is as it should be, for most of their problems concern one department; however, technical research presents problems from time to time that are not routine and whose costs cannot be measured by the criteria of one department. It is in this area that *economics must judge the technological.* One writer has aptly said, "It is the duty of economic analysts to remind the specialists constantly that they are members of a symphony orchestra—not soloists."

Why Bankrupt Roads Are Good at Research

The need for business research is seldom recognized in a company until a crisis arises, or until such a time that even the short-sighted can see the crisis coming. This is one reason why today the railroads that have been in reorganization during the past twenty years have a greater number of business research departments than the solvent roads.

There are very real dangers on the business horizon. Every railroad and business executive knows that unless a business can maintain a reasonable amount of confidence on the part of the public, of labor and of investors, the government is going to take over the job of planning and directing the enterprise. The challenge is clear. It is reasonable to assume that such a difficult and complex responsibility can be fulfilled out of hand—and in the absence of careful study and planning to formulate a winning strategy? Some of the questions which constitute dangers on the railroad horizon are:

1. What changes are taking place in the commercial geography of the nation, and what effect will these changes have on the traffic, revenues and operations of a given railroad?
2. What effects on railway transportation are the changes in the basic materials industries likely to cause?
3. What can railroads gain and what are they likely

Student of Railway Research

George Rugge is now a lieutenant in the Army Signal Corps, on active duty. A Kansan by origin, Lieutenant Rugge is a member of the engineering staff of the Santa Fe. In the fall of 1941 he was granted a year's leave by his company to accept a Sloan Fellowship at M. I. T. and the article here presented is a summary of the result of the study he was thus enabled to undertake, prior to his entrance upon active military duty.

In the course of his investigation, the author not only read widely in the literature of the subject but he also developed a numerous acquaintance, both in the railroads and industry, among officers and executives familiar with and interested in business research problems. Hence his report reflects the views of men of extended practical experience with these problems.

to lose because of the great development in the aircraft industry?

4. What shall a railroad as a transport company do about the competitive vehicles of transport?

5. How can a railroad develop sounder public, labor and governmental relations?

6. How can a railroad furnish the type of service that the public wants at a rate that will move the goods?

Research Helpful During War

A great deal is being written and spoken about "post-war planning." Many believe that "planning" departments should shelve all work that does not contribute directly to the war effort. But in war time, the need for research is not lessened; war really calls for greater effort in this direction. There is no better time to clear an organization of decadent practices and useless frills than in war time. A skeleton force of business research men working on war problems may be worth, measured in terms of future profits, a thousand times the cost.

New methods of handling reports and accounting figures may be installed; all sorts of methods can be devised and tested for conserving manpower, materials and company financial resources. Analytical thought applied to these problems will produce many methods directly applicable, also, to peace time operation. In one large and progressive manufaturing company, several business research men have recently been hired to work on such problems as improving methods of accounting and control, handling of labor, training employees and plant utilization. As a result of this research, this company is increasing its production of war material per unit of manpower, and at the same time is developing a 'know-how' on keeping the income statement black after the war.

Economic studies of railway problems are as old as the railway itself. The first railways at Newcastle-on-Tyne were the result of the same type of thinking as the management engineer applies today in improving production methods. The railway industry was early in the application of economics to business—partly because transportation cuts across and is a part of the economic life of every form of business. Men like John Stevens called themselves "locating engineers" rather than business research analysts. It is doubtful, however, even today if any other industry has developed a practical technique of economic analysis superior to that used by the old-time locating engineer in determining questions as to grades, curvature, distance, and rise and fall in railway lines.

Statistics Not Always Concrete Facts

In more recent years the trend of the application of economic analysis to railroad problems has taken the direction of using statistical and accounting methods for control on the railroads. This has been necessary, partly because of the handling of the mass figures involved in the routine of the business, and partly because of the geographical separation of the employees. Closely allied with this trend has been the increasing amount of economic data that are being collected by the railroads. But caution is needed in using industry-wide statistics. There is a tendency among business men to fall into the error, common in academic circles, of using national and industry-wide statistical data as definite measures of concrete facts. A nation-wide average does not necessarily portray conditions in any one company—and to attempt to solve a specific local problem on the basis of national, or even territorial, figures may result in serious error. Thus it is possible to stretch the plenteous economic information about the railroads far beyond its usefulness, and by so doing to arrive at unfortunate results. The use of such general and average data in place of localized information often conceals reality rather than shedding light and thus stifles creative effort in the formulation of a company's business policies.

The business research function on a railroad may be organized to serve two primary purposes: First, to act as a service unit for the president, and, second, to act as a service group for the line executives. The president is usually served best by a centralized research group, while the line officers are usually served best by a departmentalized research or some other decentralized arrangement.

There are executives who believe that business research should be confined to those problems which are of such magnitude and complexity that they can be handled only by organizing large special research groups for each special problem. There is a danger, however, that such a research system may rapidly become only an error-correcting agency. The type of problems to be dealt with therefore should influence the location of the research group. Besides the distinction between internal, general management and external problems, the magnitude of the inquiry must be considered.

Purposes of Business Analysis

Other railway officers believe that the training of future executives should be one of the most important purposes of a research organization.

The purpose cited by some railroads for establishing a research department is to improve the lines of communication between officers and departments.

In some cases the purpose of the research group was to develop methods of gathering and interpreting economic data of value to the railroads.

It is the function of some business research groups to be management engineers for the railway.

There are three characteristics of railway organizations that affect the location of research men within the company. *First,* the geographical separation of the operations makes it difficult for research groups which are a part of general management to develop suitable channels of information. *Second,* the need for functional specialization has forced all the large roads to develop a great many special departments (i.e., such as mechanical, engineering, accounting, transportation, passenger traffic and freight traffic). These special departments co-ordinate their routine line duties very closely with the regional and divisional managements, but at the same time their standards, rules and policies are set by the departmental managements. Care must be taken, then, to avoid establishing a decentralized research system which will cause the regional and divisional officers to work at cross purposes with the specialized departmental men.

Third, the seniority system makes it difficult to get men into the departments who can contribute an outside point of view. Three of the companies interviewed felt that some men with other than railroad experience should be included in the business research organization. It is often less difficult to bring outside men into central groups which are located in the president's office than it is to introduce them departmentally.

The staffs of most successful business research de-

partments are composed largely of younger men. The lack of trained young men may force a railroad executive to choose the centralized type of research organization because it requires less men and it is not necessary to have so many qualified men as would be the case if one or more had to be provided for each department.

Those roads which over a period of years have developed a group of young, well equipped supervisory officers have found that much of the internal and departmental business research is done by them without the organization of a formal research program. This situation still leaves untouched, however, the serious problems which lie in the fields of general policy and external relations.

To Centralize or Decentralize?

Business research units may classify from the standpoint of their location in an organization, into five types as follows: (1) centralized units (2) departmental units; (3) committee units; (4) units consisting of an economist or a statistician; (5) units consisting of a single executive.

The *initial* difficulties which will be encountered when a new research division is organized in a company will be less if the centralized type is chosen. But, in *actual operation,* a central unit will encounter many obstacles unless a very strong leader is chosen for the director. The centralized unit will tend to be more objective in its thinking than the departmental unit, because it sees the company as a whole and not through the eyes of a single department; it is not influenced by special departmental interests.

The central research unit has difficulty, however, in obtaining first-hand information from other sections of the company. Such a group, therefore, must develop its own system of communication to all levels of the company organization. The task means the creation of mutual respect and friendly personal relationships which in some cases may take several years.

Departmental or decentralized research units are, as their designation suggests, attached to various departments or divisions of a company. For example, such organizations might be located in each department—such as engineering, mechanical, accounting, transportation and purchasing departments. Research workers may be located at one point in each department, or at various levels within it. It has been suggested by a professor of transportation that business research workers might be located as far down in the departments as the offices of the superintendent of motive power, superintendent of car service, division freight or passenger agents, district engineers and regional accounting officers. These men might do both technical and economic research work. In fact, a fundamental premise of the departmental system is that the technical and economic research must be combined.

Achieving Flexibility

Greater flexibility is obtained with departmental research units than can be had with a centralized group. When a problem is company-wide, a committee may be formed of research men from the various departments—varying in number and kind of personnel according to need. Some centralized groups acquire this flexibility by calling in personnel from the various departments, when the need arises. The established lines of interdepartmental communication are used with departmental research, instead of having to set up a new level of communication, as the centralized type must do.

On the other hand, research workers located in various departments may many times be found working on important departmental projects at a time when joint research is needed by top-management.

A Danger in the Committee Method

Committee business research units are defined as a group of railway officers or other competent staff men who are freed of all other duties and are brought together to study a certain problem for the company. Many railroads have used this method to a limited degree, but in one case it is being used very extensively. Under this system the men are detached from their line jobs and are given full-time research assignments; when the project is completed they return to their former positions. This type of program can be initiated without altering the company organization or adding to it. This type of group brings together the company's best qualified men for the job and also gets men who "know their way around on the railroad." The committee system will, however, be difficult to use on roads where there is a lack of young, well-trained men that understand the scientific methods of analysis. As heretofore suggested, this method of investigation tends to follow problems rather than to anticipate them.

Economists or statisticians have been hired by some roads to interpret the basic economic trends that might affect the company. These men are not part of the statistical department, but are separate from all departments. Their work consists primarily of furnishing the executives with economic data concerning the broad economic movements. Their functioning is usually limited because of lack of staff. They have an important responsibility but the limitations put upon them have usually been too great to enable them to do business research of the magnitude that is needed.

The one-man executive type of business research is similar to that done by the economist. One man is trying to fill the need for many men.

The success of a business research department of any type depends on the ability and personality of its personnel. This problem has three parts: Selection, Training and Control.

Qualifications of a Research Director

The director of a railroad business research group should have in some way acquired the "feel" of the business that makes him a "railroader". Men who have shown unusual ability in more than one phase of the railroad may be likely men. Also, they should have shown the ability to contribute effectively to problems of major policy. In fact, the director must have as thorough a grasp of the railroad as any officer.

[*The second and concluding installment of this much-condensed abstract of Mr. Rugge's study will appear in an early issue of* Railway Age. *In this coming installment, further discussion will be presented of the problem of personnel and organization of business research on a railroad—together with a list of practical questions to which railroad officers want answers, and which only this kind of research can give. The abstract is concluded by the statement of 20 principles which, from the author's investigation, he concludes should be observed to obtain best results in an undertaking of this kind.*—Editor]

Women on South African Railways

Employed in a wide variety of occupations, not all of them light work either, replacing men in armed forces

By Mrs. Thelma Seawright*
Johannesburg, Transvaal, South Africa

FOR long it has been said that a woman's place is in the home. If this is true, women have proved that the qualities required to keep a home running smoothly can, in times of emergency, be diverted to other channels, and have fitted them for many types of work formerly reserved for men. Women everywhere are playing a prominent part in the present war, and in South Africa where a large proportion of the country's man-power has been diverted to the fighting forces, women are helping to keep the wheels of industry turning, taking the place of men in the professions, contributing to munitions production, and working for the country's war effort in many other ways.

Not Many Pre-War Jobs for Women

Before the war the occupations to which women were appointed on the South African Railways were confirmed mainly to social welfare work; shorthand and typing; certain forms of clerical work, such as the operation of Hollerith accounting machines and ticket sorting; telephone operation, etc. The rapid development which has taken place in regard to the employment of women is apparent from the following figures. In March, 1939, 957 women were employed on the South African Railways, and in March, 1942, the figure had increased to over 3,100. The figure has, of course, again risen since March.

The Railway Administration has made every endeavor to release as many men as possible for active service, and in so doing it has been necessary to take on more and more women to fill the gaps. The process of replacing men with women has been gradual and women have been tried out in one field after another. They have emerged from their testing time successfully, and as the Administration's needs have grown so the body of women workers has grown. Most of the appointments are for the war period only, and many of the women who have been appointed are dependents of men on active service. There are approximately 10,000 railwaymen on active service and, in addition, war conditions have imposed a heavy strain on the country's transportation services. The re-employment of pensioners has helped to relieve the staff shortage to some extent, but if suitable woman-power had not been available the railways would have been severely handicapped.

Additional women have been taken on to do clerical work normally performed by men. Women messengers have been appointed and, in certain station offices, women employees have made their appearance for the first time. At some of the larger centers women have replaced men ticket-sellers; and to cope with the heavy ticket sales on the many special passenger trains, which were in operation until recently, required both tact and energy. Women graduates are engaged in design work in the architectural department and women tracers are doing useful work in drafting rooms.

Leon Levson, Johannesburg

A Job of Surface Grinding in a South African Railways Shop

For many years specially qualified women have been engaged in the sphere of health and social welfare work, but since the war their work has been extended to include visits to the homes of all railwaymen on active service, and to assist the families with any health or welfare problems which may have arisen during the absence of the men. They also provide the trained nursing staff on the ambulance trains operated by the South African Railways for conveying sick and wounded members of the forces from the ports to inland hospitals.

In railway restaurants waitresses have replaced waiters and they have shown great aptitude for this type of work. On the air-conditioned trains between Johannesburg and Capetown stewardesses have taken the place of stewards and their efficiency in the dining cars is a tribute to their training.

Women bus conductors have replaced men on certain of the suburban railway road motor bus routes. They look neat in their navy blue jackets and skirts and their courtesy and conscientiousness testify to their enthusiasm for their work.

In Pretoria, women are successfully performing the duties of teamsters on freight collection and delivery, and have been the means of releasing men for active

* Mrs. Seawright, now the wife of an American engineer in the Witwatersrand Gold Fields, was formerly a member of the publicity department of the South African Railways.

service and for rural road motor services. During the month of May a further experiment was made when women were taken on as learner ticket collectors at Capetown. These young women, who have all undergone a special training, are to work on the Cape suburban electric trains.

Helpful in Shops Also

For the first time in the history of the railways women are working beside men in the shops. When they started most of these young women had never seen the inside of a shop before, but under expert supervision they are learning quickly, and by releasing men for more skilled work they are making a valuable contribution to the country's munitions production. They have brought extra hands into short-staffed shops and by their efforts output has been considerably increased. The patience and endurance which for generations went into monotonous household tasks have now been transferred to mechanical work, and it is, perhaps, because of this background that women have been found to be superior to men on repetitive work.

To avoid mistakes through inexperience and consequent and wasted materials, the women are carefully supervised and for most operations their machines are set for them; but the accuracy, and high standard of efficiency required in the shops, demand intelligence and application even in the execution of minor tasks. It is at first rather startling to see women, almost shorn of femininity in dungarees and caps, in this setting of machines, furnaces, compressors, forges and welding torches, which has for so long been considered to be the domain of men. Going through the shops, however, it soon becomes obvious that the women have made themselves at home in this strange atmosphere and that they are in earnest about their work. Standing beside their machines with watchful eyes and ready hands they are studies in concentration. The dexterity with which they handle turret lathes, emulating the rhythmic movements of their machines, their painstaking precision, and the competent way in which they work with oxy-acetylene torches, is evidence of their adaptability.

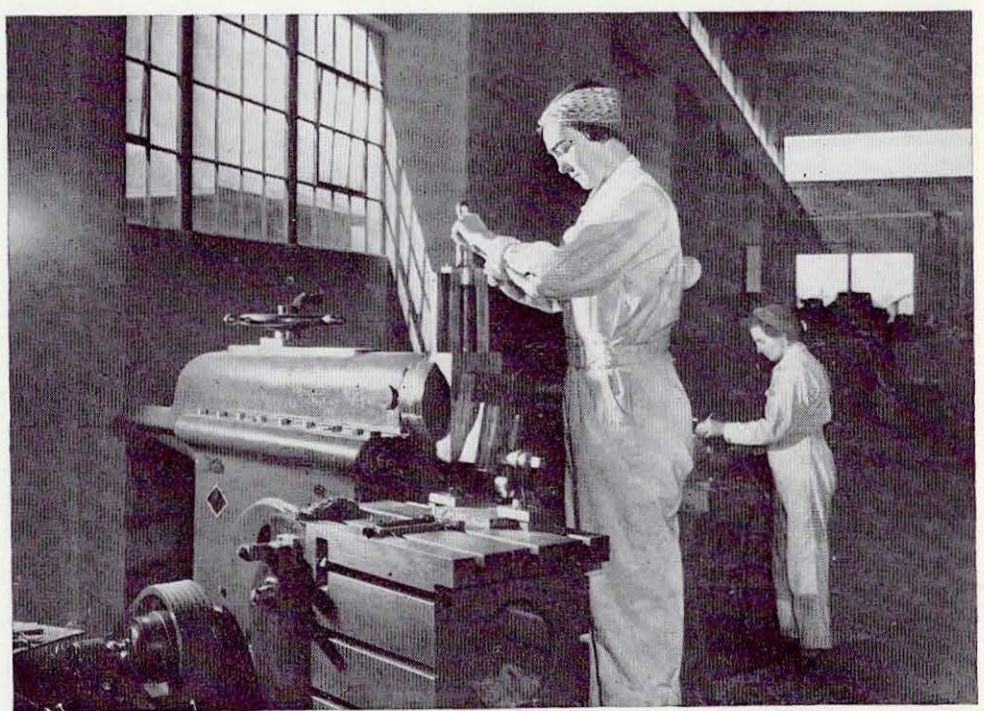
South African Railways & Harbours Photo

Welding 250 lb. Bomb Tails in a South African Railways Workshop

The building of fire pump trailers for Railway Civilian Protective Services is among the more recent jobs allocated to the road motor shops, and young women disguised in goggles weld certain parts for fire-fighting engines. Bomb boxes are made in the shops and women operate the cross-cut saws for cutting the timber. Women upholsterers operate electric sewing machines and with nimble fingers transform yards of green leather into bus seats. There are also women inspectors checking the work as it passes out of the shops.

The women in the road motor workshops have the distinction of being the only women on the South African Railways to work on night shift, and they do so willingly and without complaint. In one of the electrical workshops a great deal of munitions work is also being undertaken, and here again women are helping to step up production.

(*Continued on page 617*)



Operating a Shaper in a South African Railways Shop

Leon Levson, Johannesburg

Company Material Is 7.5 Per Cent of Revenue Ton-Miles

Six months' deadhead total is 15 per cent over same months in 1941, but ratio declines—Effect on car supply studied

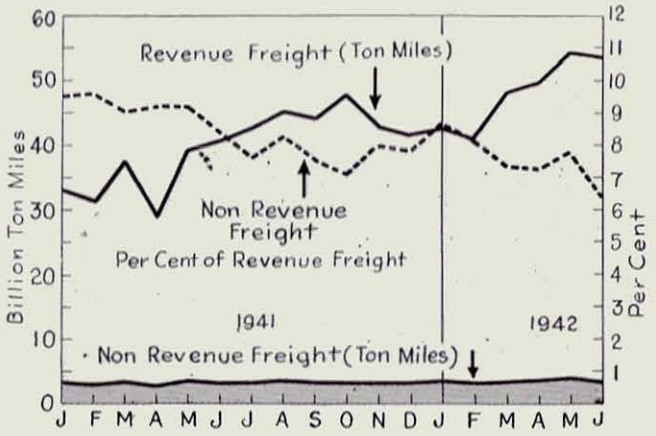
AN analysis of month-to-month records of railway traffic, made to obtain more information about non-revenue freight (chiefly railway material) and to throw more light on its importance as a factor in the freight car supply problem, brings out the fact that, with the large increases in revenue traffic, non-revenue freight is now smaller in relation to the total traffic carried. However, the volume of this freight, as well as of revenue freight, has increased and continues to bear out the statement that the railroads are among their own largest shippers. The figures also indicate that in recent years, despite the difficulties of regulating traffic, the railroads, with few exceptions, have been able to keep their non-revenue traffic from interfering seriously with revenue movements.

As explained in a previous study*—which dealt only with annual figures—non-revenue freight, which consists of materials necessary for railway maintenance and operation, will always represent a significant portion of the total freight carried by them, and when freight cars are scarce, must be so handled as to require a minimum number of cars suitable for revenue freight, especially at the time of the year when these freight cars are in greatest demand for war materials and other than strictly railroad freight.

One Car of Deadhead to 16 of Revenue

During the first six months of 1942, Class I line-haul railroads carried 21,932,419,000 ton-miles of non-revenue (railroad) freight. This was 15 per cent more non-revenue freight than was carried in the first six months of 1941, and 34 per cent more than in the same period of 1940. In June, the latest month for which figures are available, they carried 3,451,930,000 ton-miles of non-revenue freight, which was 7 per cent more than was carried in June, 1941, and 24 per cent more than was carried in June, 1940.

The six months' total for the current year was equal to 7.5 per cent of the ton-miles of revenue freight carried, as compared to the ratio of 9.1 per cent for the first six months of 1941, and 9.5 per cent for the first six months of 1940. The non-revenue freight in June was equal to 6.4 per cent of the revenue freight in that month. This was the smallest ratio of non-revenue freight to revenue freight in any month of record, being compared to a ratio of 8.3 per cent in June, 1941, and 9.3 per cent in June, 1940. The non-revenue freight in June for all Class I line-haul railroads, though smaller in proportion to the revenue freight than in many previous months, was equal to one ton-mile of non-revenue freight for every 15.5 ton-miles of revenue freight. The ratio to revenue freight would be substantially larger by including materials for railroads which moved as revenue freight on foreign lines, and it would be still larger by adding the tonnage of materials used in manufacturing railway materials.



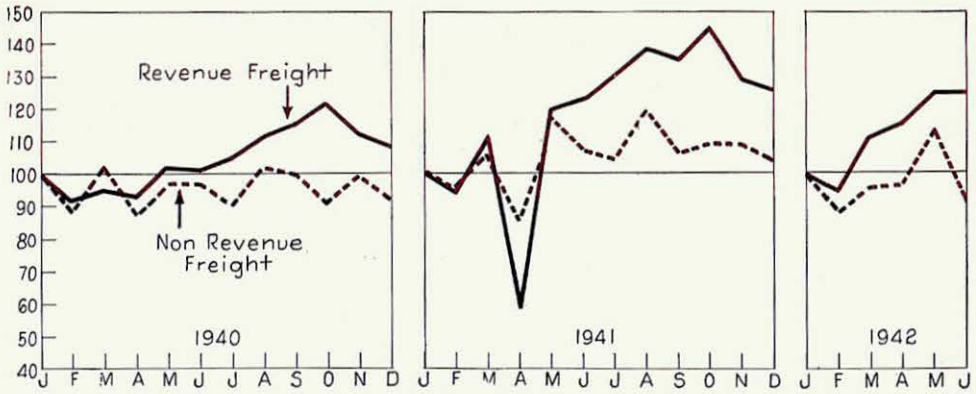
Ton Miles of Revenue and Non-revenue (Railroad) Freight Carried by Class I Line-Haul Railroads and Per Cent of Non-revenue to Revenue Freight Month to Month.

While large quantities of railroad freight are carried by the home railroad in equipment which is not suited for revenue service, revenue equipment is used extensively by all the railroads in handling their own materials. In almost all instances, coal, ties, rail and all other purchased materials are moved in revenue cars and much equipment, which was previously classified as unserviceable for revenue freight operations, has been restored to this service, at least for handling local shipments. For comparative purposes, it can reasonably be assumed that every time a car is loaded with company material it means one less car for revenue service, and that every car of railway material, though moving as revenue freight on a foreign line, is also one less car available at the time for carrying war materials or other shipments.

Timing Saves Cars

Since the volume of revenue traffic fluctuates month to month, usually being at its lowest early in the year and reaching its peak in the fall, the ideal plan of handling railway material to achieve the greatest use of cars with the least interference with revenue movement is to move as much of it as possible when there is a surplus of cars, and as little as possible when the supply of equipment for revenue freight is at a minimum; and likewise to time the shipments of railway materials from distant sources so that they will not reduce the supply of equipment which can be used for other service. Considering the volume of materials required by railroads, the regularity with which fuel and other material are consumed and other factors, such as the seasonal nature of the production and consumption of much rail-

* *Railway Age*, February 7, 1942.



Comparative Ton Mile Fluctuations Class I Railroads Each Year. January = 100

way material—not overlooking the limitations which are now imposed by government agencies upon storing materials beyond immediate requirements—exact timing of railway material movements with other transportation is easier to promote than to achieve. With a car situation so tight that extreme efforts are being made to distribute revenue shipments more evenly throughout the year, also to require heavier loadings and to reduce cross hauling and other wasteful practices in car utilization, it is to be expected that much effort has been exerted by the railroads in this direction, however, and this conclusion is borne out by the traffic statistics.

During 1940, as shown in one of the charts, the revenue ton-miles carried by Class I line-haul carriers in the aggregate were at their lowest in February, when they were 8 per cent less than in January; and they were at their highest in October, when the total was 22 per cent above January. By comparison, non-revenue ton-miles, while fluctuating much less during the 12 months' period, were at their peak in March, when they stood 3 per cent above the level of January and, except in February and April, they were at their lowest level in October, being at that time 9 per cent less than in January.

Similar trends prevailed in 1941. In that year, revenue ton-miles were at their lowest level in April, being

Revenue and Non-Revenue (Railroad) Freight—12 Months, 1941*

	Revenue Ton Miles Thous.	Non-Revenue Ton Miles Thous.	Ratio to R.T.M. Per Cent
A. C. & Y.	236,574	2,595	1.1
Ala. Gt. Sou.	1,070,510	32,029	3.0
Alton	1,550,655	78,489	5.1
Ann Arbor	443,471	38,671	8.5
A. T. & S. F.	18,780,345	1,672,199	9.0
At. & W. Pt.	302,161	7,241	2.4
A. B. & C.	453,087	55,791	12.3
A. C. L.	4,351,182	637,745	14.6
B. & O.	22,562,541	1,334,952	5.9
Bang. & Ar.	255,653	20,682	8.1
B. & L. E.	2,794,105	55,685	2.0
B. & Alb.	905,275	71,058	7.9
B. & Me.	3,137,598	175,398	5.6
B.-R. I.	73,979	6,671	9.0
Camb. & Ind.	79,821	3,639	4.5
CNR in N. E.	185,980	19,401	10.5
CPR in Me.	519,870	34,823	6.7
CRR in Vt.	136,025	3,661	2.7
C. of Ga.	1,843,772	171,836	9.3
C. of N. J.	2,558,485	98,536	3.8
C. Vt.	725,255	8,927	1.2
C. & W. C.	365,939	17,623	4.8
C. & O.	22,549,791	1,249,410	5.5
C. & E. I.	1,576,949	86,762	5.5
C. & I. M.	493,321	13,559	2.7
C. & N. W.	8,268,485	1,194,977	14.4
C. B. & Q.	11,339,188	1,584,454	13.8
C. G. W.	2,232,615	194,183	8.7
C. I. & L.	1,012,851	48,915	4.8
C. M. St. P. & P.	12,804,687	1,714,359	13.4
C. R. I. & P.	8,712,683	753,968	8.6
C. St. P. M. & O.	1,670,343	48,655	2.9
C. N. E. & T. P.	2,155,628	73,731	3.4
Clinch.	1,444,930	23,860	1.6
Col. & Sou.	788,304	42,430	5.4
Col. & Gr.	75,160	4,900	6.6
D. & H.	3,946,735	178,079	4.6
D. L. & W.	4,268,775	312,242	7.3
D. & R. G. W.	3,188,537	205,558	6.5
D. & S. L.	173,032	17,720	10.2
Det. & Mack.	52,809	1,466	2.9
D. M. & I. R.	3,317,962	28,805	8.7
Erie	10,057,313	645,811	6.5
F. E. C.	422,165	4,628	1.1
Ft. W. & D. C.	476,499	44,882	9.4
Ga. & Fla.	140,988	8,558	6.1
Ga.	468,908	18,631	4.0
Ga. S. & Fla.	282,946	17,309	6.3
G. N.	13,215,682	964,815	7.3
G. B. & W.	168,612	4,342	3.4
G. & S. I.	127,214	4,562	3.5
Gulf Coast	1,227,694	108,217	8.8
G. M. & O.	2,449,419	219,100	9.0
I. C.	14,225,925	1,454,617	10.2
Ill. Term.	380,569	6,447	1.7
I. G. N.	981,922	95,908	9.8
K. C. S.	1,807,932	131,763	7.3
K. O. & G.	224,778	18,804	8.5
L. S. & I.	104,503	.....	..
L. & H. R.	292,014	2,458	1.0
L. & N. E.	423,352	4,791	1.1
L. V.	5,204,794	60,766	1.2
Long Is.	99,092	4,176	4.2
La. & Ark.	954,642	44,263	4.6
L. & N.	12,970,264	726,828	5.6
Me. C.	814,053	23,297	2.8
Mid. V.	113,320	13,006	11.5
M. & St. L.	1,058,365	107,698	10.0
Soo	3,477,982	241,126	7.0
Miss. C.	68,293	1,482	2.2
Mo. & Ark.	134,163	18,209	13.7
Mo. Ill.	149,943	5,018	3.3
M-K-T	2,692,099	424,071	15.7
M. P.	10,644,485	1,843,800	17.4
Monongа.	593,521	2,773	0.5
Montour	133,703	975	0.7
N. C. & St. L.	1,497,371	78,721	5.2
Nev. Nor.	42,567	3,655	8.6
N. O. & N. E.	489,299	15,713	3.3
N. Y. C.	35,471,488	3,827,938	10.8
N. Y. C. & St. L.	6,759,566	259,914	3.8
N. Y. N. H. & H.	3,871,924	176,107	4.6
N. Y. O. & W.	545,042	20,900	3.7
N. Y. S. & W.	81,172	1,305	1.6
N. & W.	17,305,604	501,842	2.9
Nor. Sou.	452,650	31,167	6.9
N. Pac.	8,559,426	1,388,737	16.2
N. W. P.	239,390	9,494	3.9
Penna.	52,098,672	3,501,263	6.7
P.-Read. S. S.	161,494	2,291	1.4
P. & L. E.	2,275,998	39,919	1.8
P. & Shaw.	108,821	4,620	4.2
P. & W. Va.	416,518	4,132	1.0
P. S. & Nor.	171,288	5,582	3.3
Read.	6,525,708	195,578	3.0
Rut.	224,881	21,400	9.5
St. L.-S. F.	4,985,061	758,564	15.1
St. L. S. W.	2,689,988	225,965	8.4
Seaboard	4,731,784	777,857	16.4
Southern	10,558,709	1,356,855	12.8
S. P. Lines	18,820,306	1,397,455	7.4
Spok. Int.	68,801	3,085	4.5
S. P. & S.	1,406,511	78,871	5.6
Tenn. C.	229,794	9,984	4.3
T. & N. O.	5,494,551	358,817	6.5
T. & P.	2,413,525	292,573	12.1
Tex. Mex.	48,577	1,385	2.8
U. P.	18,738,920	3,231,172	17.2
Utah	87,824	1,128	3.0
Va.	4,220,193	127,021	3.6
Wab.	5,598,958	391,759	7.0
W. Md.	2,662,480	159,373	6.0
W. Pac.	2,867,066	140,281	4.9
W. & L. E.	2,069,216	66,949	3.2

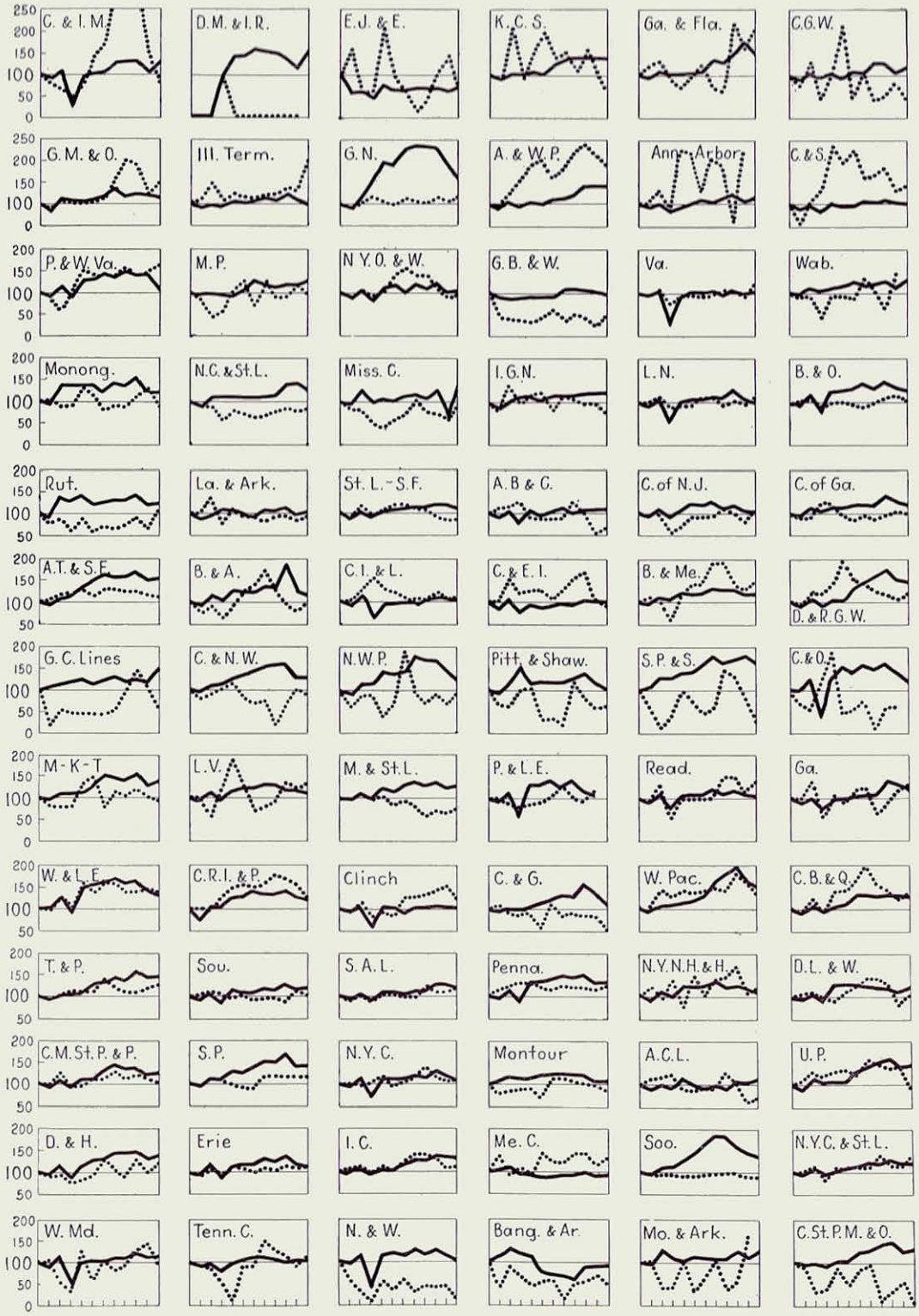
* From monthly reports to I. C. C. Subject to revision.

43 per cent below January, and they were again highest in October, when the total was 45 per cent above January and 60 pe rcent above April; while non-revenue ton-miles reached their peak in August, at a level 20 per cent above January, and then tapered off, being only 9 per cent higher in October than in January.

The success of the railroads in avoiding heavy shipments of railroad freight during the peak of revenue movements of the current year is not yet a matter of record, and is not clearly indicated by figures now available. Actually, the trend of non-revenue ton-miles was downward instead of upward during the first six months, and the total was 8 per cent lower in June than in January; while revenue traffic was 20 per cent higher. However, 7 per cent more non-revenue freight was handled from January to June of this year than in the same period of 1941; and in the face of shortages of some equipment and the restrictions on material procurement now in effect, the opinion is held in some quarters that non-revenue freight carried during the last six months will represent a smaller portion of the peak revenue traffic than in the previous year.

Trends Compared

The effort to compare revenue and non-revenue trends on different railroads is surrounded by difficulties. In the first place, the non-revenue ton-miles represent the



Comparative Fluctuations in Revenue (Unbroken Line) and Non-revenue (Broken Line) Ton Miles in 1941. Not Quantities.

difference between the net ton-miles, revenue and non-revenue, reported by each road to the Interstate Commerce Commission under Item 7, Form OS-A, and the revenue ton-miles reported under Item 4, Form OS-D. While in most cases the reasonableness of figures obtained in this manner were not open to doubt, this is not true in other cases, and the figures of a number of railroads could not be reconciled. In other cases, especially on small railroads, the values fluctuated too widely for analysis. While, moreover, comparisons between roads are possible only by reducing all values to a common denominator, which, in this study, is the volume of traffic in January taken as 100, it is difficult to avoid misleading conclusions where the actual tonnages are not also disclosed. The effect on car supply, for example, is less, in the case of non-revenue traffic which reaches its maximum during the peak of revenue traffic, on a railroad whose non-revenue freight is only 5 per cent of its revenue freight, than, in the case of non-revenue traffic which is large in the aggregate and rises only moderately during the peak of revenue traffic, on a road where the non-revenue tonnage is equal to 10 or more per cent of the revenue traffic.

The analysis which has been made, however, affords a clearer picture of the experience of different railroads than has hitherto been afforded. Several charts have been prepared to show these trends. During 1941, the non-revenue ton-miles carried were at their highest during the same month when the revenue ton-miles were highest on 15 of 80 roads studied, and at their lowest during the peak of revenue traffic on 16 other roads; while on 12 roads, the peak in non-revenue traffic occurred several months before the peak in revenue traffic.

Revenue and Non-Revenue (Railroad) Freight—Class I Line-Haul Railroads*

1942	Revenue Ton-Miles Thous.	% of Jan.	Non-rev. Ton-Miles Thous.	% of Jan.	Non-rev. to Rev. %
Jan.	42,962,302	100	3,703,514	100	8.6
Feb.	40,810,773	95	3,298,196	88	8.1
Mar.	48,255,531	112	3,598,373	96	7.4
Apr.	49,997,495	116	3,633,347	97	7.3
May	54,270,231	126	4,247,059	114	7.8
June	53,852,328	125	3,451,930	92	6.4
6 Mos.	290,148,660	...	21,932,419	...	7.5
1941					
Jan.	32,941,542	100	3,128,036	100	9.5
Feb.	31,191,029	94	2,994,507	95	9.6
Mar.	37,242,830	112	3,329,361	106	9.0
Apr.	28,960,407	57	2,656,774	85	9.2
May	39,721,024	120	3,670,448	117	9.2
June	40,678,863	123	3,353,238	107	8.3
6 Mos.	210,735,695	...	19,132,364	...	9.1
July	42,845,941	130	3,233,210	104	7.6
Aug.	45,493,089	138	3,743,913	120	8.3
Sept.	44,309,304	135	3,307,156	106	7.5
Oct.	47,734,400	145	3,400,360	109	7.1
Nov.	42,628,605	129	3,402,922	109	8.0
Dec.	41,307,313	126	3,237,802	104	7.8
12 Mos.	475,072,001	...	38,073,552	...	8.0
1940					
Jan.	29,685,354	100	2,832,886	100	9.7
Feb.	27,158,669	92	2,503,564	88	9.3
Mar.	28,202,506	95	2,915,045	103	10.3
Apr.	27,430,197	93	2,479,131	87	9.0
May	30,314,274	102	2,766,921	97	9.1
June	30,116,431	101	2,783,377	97	9.3
6 Mos.	172,907,431	...	16,280,924	...	9.5
July	31,167,043	105	2,549,097	90	8.2
Aug.	33,500,505	112	2,905,000	102	8.7
Sept.	34,195,153	115	2,865,253	100	8.7
Oct.	36,024,928	122	2,588,829	91	7.2
Nov.	33,145,049	112	2,809,772	99	8.5
Dec.	32,285,072	109	2,618,145	92	8.1
12 Mos.	373,253,147	...	32,122,686	...	8.6

* Item 7, ICC Form OS-A, net ton-miles, revenue and nonrevenue, minus Item 4, OS-D, revenue ton-miles. Subject to revision.

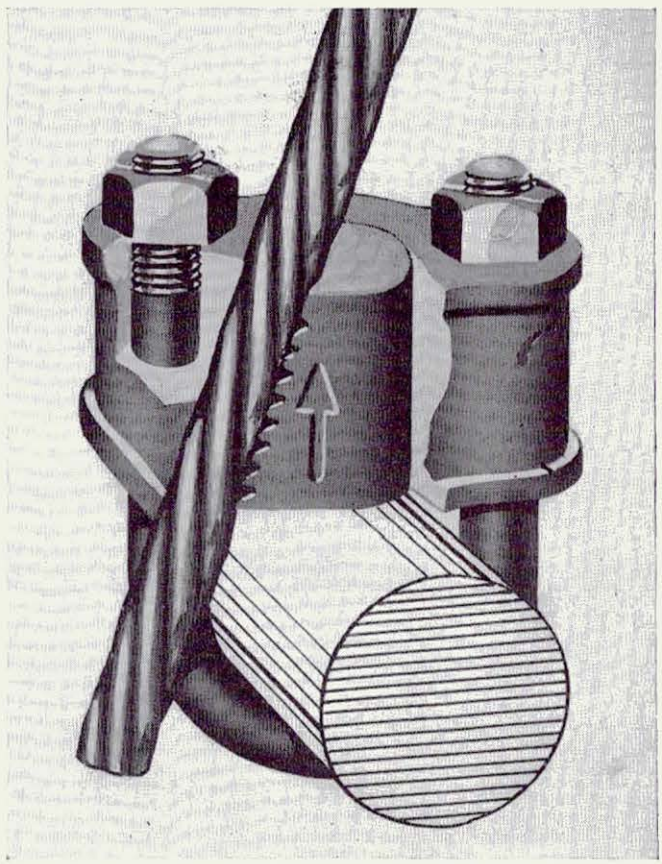
Brake Beam Safety Support Improved

THE new type Universal brake beam safety support, developed by the Grip Nut Company, Chicago, and described in the *Railway Age* issue of January 17, 1942, has been improved recently by two changes in design. Neither affects the fundamental operating principle of the device.

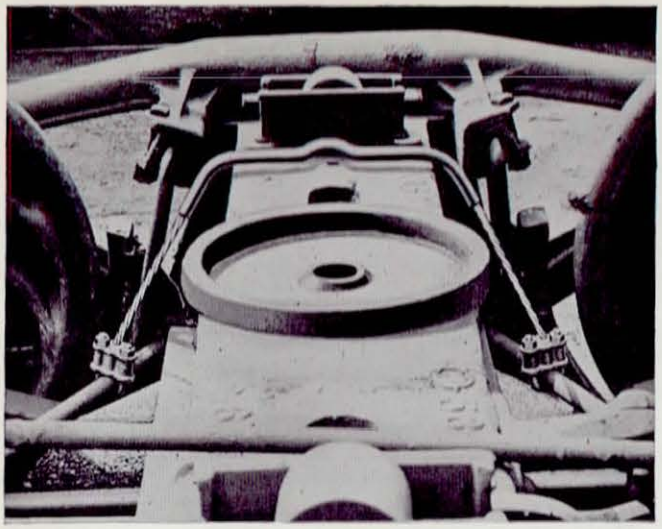
The Universal brake beam safety support is designed to prevent brake beams from dropping because of brake-hanger or brake-beam failure. It consists chiefly of two short lengths of double-galvanized cable per truck, connected to the brake-beam tension member by means of special iron fittings, and extending up to and over the truck bolster with about one inch clearance. The seven-strand semi-rigid cable is protected by a short section of enclosing pipe where it passes over the bolster, and is held in place by a kink or hump. One of the improvements is to change this kink or hump from a vertical to a horizontal plane, giving increased clearance between the top of the support and the bottom of the body bolster.

In the original design, the cable ends were fixed or anchored in the malleable-iron fittings by expanding the wires at each end and filling the taper pockets with molten zinc in accordance with customary practice. Experience developed that this fixed cable length required a number of different lengths to allow for the necessary clearance. With the new fittings, cables can be adjusted to the desired length and then anchored by means of wedge inserts. The entire assembly is held in place with Grip Unit nuts tightened on the U-bolts.

This device, which is an A. A. R. approved alternate



Malleable-Iron Fitting Cut Away To Show How the Cable Is Adjustable for Length and Held by a Wedge Insert



Adjustable Universal Brake Beam Safety Support Applied to a Freight Car Truck

standard and can be fitted by easy adjustment to all types of freight car trucks, thus reducing the inventory of brake-beam safety supports which need be carried in stock. When renewing a brake beam, only one side of the support need be detached (R & R of four ½-in. nuts), which simplifies removal and replacement of the beam.

C. P. R. Has New Diner On Its Maritimes Run

HEAVILY increased passenger traffic on the Canadian Pacific Railway between Montreal, Quebec, and St. John, New Brunswick, is being better served in dining accommodations on the latest of that railway's dining cars which has recently been placed in service.

The car has been named the "Canterbury" and it accommodates thirty diners at ten tables.

The dining room section of the car is finished in natural satin birch, with matching tables and chairs, the latter covered with brown morocco leather. Between the tables are peach-colored mirror panels which extend from the wainscoting to the curtain boxes. These boxes are made of stainless steel and they serve to cover the roller-type curtains as well as to contain light bulbs which furnish a soft light through frosted bottom panels in each box. Recessed ceiling lights furnish additional illumination in the car. The curtain rods at the sides of the windows overlap into a sliding groove which prevents the curtain from bulging and eliminates the escape of light from the car interior when the curtains are drawn. Heating pipes, grilles, window sills and curtain rods in the car are also made of stainless steel.

Five large tables are arranged on one side of the car with a 2-ft. 4-in. aisle separating them from the five smaller tables on the other side. A space of 3 ft. 8 in. is provided between adjoining tables. The floor of the car is covered with a brownish-toned rug

Interior of Recently Completed C.P.R. Dining Car

and the floor in the passageways is covered with a red-tone marboleum. The ceiling of the car is rounded to meet the curtain boxes. Curtains throughout the car are of a light green color with a gold pattern.

The kitchen section of the car has been made three

(*Continued on page 617*)

The "Canterbury", a New Diner Recently Placed in Service on the Canadian Pacific between Montreal and St. John, New Brunswick

"Standard" Wages for the T. P. & W.

Such is WLB decree—McNear assails ODT management for accepting "featherbedding", which Barriger denies, citing also record earnings and increased tonnage per train

REPORTING last week on the long-pending controversy between the Toledo, Peoria & Western and its train and engine service employees, the National War Labor Board has issued a directive order stipulating that the road should not be returned to private operation until the management agrees to make wage adjustments in line with last December's settlement of the general wage case and to accept the working rules under which the road is now being operated by the Office of Defense Transportation. Thus did the Board, in an opinion by Wayne L. Morse, approve, with the exception of the retroactive date, the terms of the award made in the case by Judge Benjamin C. Hilliard of the Supreme Court of Colorado, who was appointed by WLB to arbitrate the dispute.

McNear Opposes "Featherbedding"

Meantime, George P. McNear, president of the road, has issued the company's 1941 annual report in which he accuses the federal management of the T. P. & W. of promoting "wartime waste of manpower and inefficiency" in the operation of the property, because of what he describes as its adoption of the "featherbed rules." John W. Barriger III, federal manager of the T. P. & W., in reply to a telegram from *Railway Age,* has pointed out that the road now is earning more net railway operating income than ever before in its history and that its operating ratio is under 50. He states that the new working rules have eliminated "penalty" payments which were in effect when Mr. McNear was operating the property and that what Mr. McNear describes as "featherbedding" is only the "dual basis" of pay which, Mr. Barriger contends, is called for by the Adamson Act.

Judge Hilliard had recommended that "standard rates of pay in effect on Class I Eastern railroads on November 10, 1940, and as increased September 1, 1941, and as further increased December 1, 1941, be established retroactively beginning November 10, 1940, for the period during which each respective standard rate was in effect." November 10, 1940, was 30 days subsequent to the date on which the T. P. & W. had given notice of a desire to change rates of pay and working rules, and the Brotherhood of Locomotive Firemen & Enginemen and the Brotherhood of Railroad Trainmen took the position which Judge Hilliard supported, that any adjustment should be retroactive to give the employees the Class I standard rates from that day. The Board, however, took the position that this and other late-1940 and early-1941 disputes were all part of the movement which finally culminated in the general settlement of last December, and hence it applied that settlement here. The working rules which the decision calls upon the T. P. & W. Management to accept are those noted in the *Railway Age* of August 1, page 183.

In the opinion which he wrote for a unanimous Board, Mr. Morse assails the T. P. & W. management for its "defiance" of WLB and President Roosevelt in refusing to agree to submit the controversy to arbitration. Nevertheless, the opinion expresses the hope that the management will accept the decision and "once more assume control of the railroad." Meanwhile, no reference is made to the fact that the National Mediation Board failed to certify the controversy to the President as one calling for the appointment of an emergency fact-finding board. Commenting editorially on the controversy, *Railway Age* said in its issue of March 28, page 635, that the Railway Labor Act "certainly put no more obligation on T. P. & W. President George P. McNear to arbitrate than it did on the Mediation Board and the President to establish a 'fact-finding board.'" The editorial went on to suggest an inquiry into the motives which led N. M. B. to remain silent, adding that "a plausible explanation going the rounds is that there are those who would not relish the publicity which a 'fact finding' report would give to the 'featherbed' rules."

The Morse opinion gets under way with a brief history of the case, pointing out that the controversy was on its way through Railway Labor Act procedures with both parties refusing to arbitrate when the war broke out. Following Pearl Harbor, the brotherhoods agreed to arbitrate; but the carrier, "despite appeals from the National Mediation Board, the director of the Office of Defense Transportation, and the U. S. Conciliation Service, steadfastly refused to present its case to an arbitrator." Then came the certification of the case to WLB on February 14, followed by WLB's February 20 appeal for an arbitration agreement and its February 27 order directing arbitration.

"In assuming jurisdiction," the opinion said, "the Board, on competent advice and evidence, found that the dispute . . . was adversely affecting work which contributed to the successful prosecution of the war. This finding was based primarily on the fact that the railroad although only about 230 miles long, was of definite importance to maximum war transportation because of its connections with big Eastern and Western railroads, thus enabling 'through freight' to move quickly eastward or westward without having to pass through the congested Chicago and St. Louis terminals."

Insisted on Arbitration

On March 2, the T. P. & W. notified WLB that it was unwilling to comply with the arbitration order, and the Board came up with another appeal which was likewise rejected. President Roosevelt then addressed a letter on March 14 to Mr. McNear. The Presidential letter reproduced WLB's "final appeal," and requested the T. P. & W. president to comply. When the management failed to budge, the road was taken over on March 21, President Roosevelt's executive order directing ODT to operate the property "pending such determination of the existing labor dispute as may be approved by the National War Labor Board." ODT Di-

rector Eastman gave the job of operating the road to John W. Barriger, III, associate director of ODT's Division of Railway Transport.

Meanwhile, the arbitration proceeded in ex parte fashion, because the T. P. & W. management persisted in its refusal to participate. Judge Hilliard held hearings from time to time between May 5 and July 2, but "representatives of the carrier at no time appeared." In this connection, the Board's report said: "Attention is called to the fact that although the management wholly refused to cooperate in the proceedings, Judge Hilliard on the basis of the evidence presented by the representatives of the brotherhoods and the Office of Defense Transportation and on the basis of his own wide experience in the field of railway labor disputes was able to submit recommendations which the Board believes constitute an eminently fair and equitable adjustment of the claims of the carrier and its employees."

But the Board had "no liking" for the task "thrust upon it" in this case. "To any fair minded person, the necessity of finally determining a dispute ex parte is an unwelcome burden," the report said. Nevertheless, it went on to insist that the dispute had been settled "in the American way and in accordance with democratic processes." Previously, the opinion had cited the Board's decision in the Montgomery Ward case to condemn what it considered was Mr. McNear's too strict adherence for wartime to the spirit of "rugged individualism."

Mr. McNear's Criticism

In his annual report Mr. McNear went into considerable detail in analyzing working conditions on the road. A press release summarizing this analysis reads in part as follows:

"Considerable wartime waste of manpower and inefficiency in the operation of the Toledo, Peoria & Western Railroad is charged to the adoption of so-called 'featherbed' working rules following its seizure by the government on March 22 of this year. The charge is made by George P. McNear, Jr., president and principal owner of the 239-mile freight line that runs between Effner, Ind., and Keokuk, Ia.

"McNear's troubles began when a strike was called on the road by the Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Firemen & Enginemen representing employees demanding standard 'featherbed' rules. These latter are described as rules which not only create numerous soft jobs and something for nothing for the employees who work under them, but which also require the employment of many unnecessary men and the use of additional motive power and equipment.

"The strike began December 28 last year, the day before the company put into effect new schedules of operation which it had previously proposed as a means of reducing waste and providing, as it said, greater simplicity and efficiency in operation. On presidential order the road later went under government management on the grounds that there had been interruption of transportation, and that the company had refused to submit to arbitration under the Railway Labor Act.

"After the seizure the War Labor Board took up again the question of arbitration that it had ordered on February 27, failure to comply with which had led to the seizure, and appointed Judge Benjamin C. Hilliard of the Colorado State Supreme Court to 'arbitrate the dispute.' McNear revealed that 'we have taken no part in the proceedings before Judge Hilliard' after a study of his background, particularly his awards—as a referee for the National Railroad Adjustment Board.

"Judge Hilliard's awards clearly disclosed his partiality to the brotherhoods and his inability to understand operating problems. We are not yet informed concerning the report made by Judge Hilliard to the War Labor Board.

"On July 1 Joseph B. Eastman, director of the Office of Defense Transportation, announced the establishment of schedules of wages and working rules that 'are in consonance with those generally prevailing upon the railroads of the country,' and these are the standard featherbed rules with some minor concessions.

"McNear presented an analysis of the road's various operations before and after the seizure to show how service, efficiency of operations, manpower required and earnings of the employees had been affected since October, 1941, before the strike started, both by the road's schedules of wages and working rules under private management in March, 1942, and by the federal manager's operations, wages and featherbed rules of July, 1942."

This analysis was intended to show that in March the man-days required for each 100 road train-miles was 15.1 per cent fewer than in October, 1941. In July under federal management the requirement jumped 58 per cent over the March figure. Also that while the average compensation per employee in March was 23.6 per cent higher than in October, the cost to the railroad in terms of total road and yard crew compensation per road train-mile was only 4.7 per cent higher than in October. In July, however, the average compensation per employee had dropped to only 7.9 per cent above October, as against a jump in the cost to railroad in terms of total road and yard crew compensation per road train-mile of 44.3 per cent.

"Featherbed" rules generally, Mr. McNear asserted, "require that all work in railroad terminal areas throughout the country, where yard crews have been established, be done solely by yard crews, and also make it difficult to eliminate intermediate terminals originally spaced about 100 miles apart when 100 miles was a fair day's run, because of the continuing requirement that freight crews be changed at such intermediate terminals."

"With 'featherbed' rules fully established in the Peoria Terminal," said Mr. McNear, "the arrangements which the road had with other railroads in Peoria for economical and prompt interchange of cars have been discontinued."

Mr. Barriger's Rejoinder

In his statement to *Railway Age*, Federal Manager Barriger explained that he had not yet seen Mr. McNear's statement, but had heard of it in a telephone conversation. He then went on to say:

"If Mr. McNear elects to accept the terms stated for the return of the road, he will find its physical, traffic, operating and financial conditions greatly improved and the morale of the organization high. While during recent months wages of employees have been raised to standard rates prevailing on other railroads serving the same territory, which involved substantial increases, the additional cost has been fully absorbed through improved expense control.

"The operating ratio is under 50 and the transportation ratio under 20. Forty-five cents of each dollar of gross is being brought down to net railway operating income, which is currently exceeding $150,000 per month. This is record earning power for the T. P. & W.

"I understand criticism is implied in the fact that more trains were run during July than March. The strike embargoes and I. C. C. service orders severely curtailed

traffic during March, which July nearly doubled, but in that latter month and now train loading is the best in history of road. The T. P. & W. is now running trains of 5,000 to 7,000 tons—much larger than those operated by the former management.

"His schedule, which in part led to the strike, followed the standard practice of 100 miles or eight hours service constituting a basic day's pay, but he cut the payment for miles in excess of 100 to one-half pro rata. This practice, however, left the dual pay principle intact, and it is that principle on which his particular objections seem centered.

"In reference to Mr. McNear's remarks about so-called 'featherbed rules,' this term properly applies only to penalty wage payments. As *Railway Age* pointed out in its August 1 issue (page 183) the T. P. & W. schedule of wages and working conditions recently established eliminates penalty payments this railroad made under its former schedule and does not entail any now being paid. The interchange practice of which Mr. McNear complains only continues procedure under which he was operating, but reciprocal interchange runs on the T. P. & W. are being extended as rapidly as possible, in view of necessary negotiations with connecting railways and employees of all lines concerned. I believe Mr. McNear often erroneously uses the term 'featherbed rules' interchangeably with the 'dual basis of pay' which is something different. The dual basis of pay is established by the so-called Adamson Act passed in 1916 and confirmed by Supreme Court test in 1917 which provides that eight hours is the basic day for computation of pay for transportation employees, with its 100-mile equivalent for road service performed.

"It has been the universal practice to pay for service-miles in excess of 100 at pro rata rates. The McNear schedule involved in the recent strike provided that miles in excess of 100 should be paid only half pro rata rates with a consequent 25-mile speed basis for computation of overtime on these longer runs. Mr. McNear's principal complaint of the present management appears to arise from its paying pro rata rates to transportation employees for miles in excess of 100 as all railroads are doing. Mr. McNear's primary objection really is the Adamson Act and is a matter for him to handle with Congress rather than with the ODT.

"Everyone admires men of principle, but principles carried to excess become obsessions and create fanatics. The latter seldom assist the accomplishment of the ends which they seek and which they could better serve by less zealous and intolerant devotion."

C. P. R. Has New Diner on Its Maritimes Run

(*Continued from page 614*)

feet longer than in previous cars of the railroad's ownership. It is 30 ft. 7 in. in length and 6 ft. 8 in. wide and has a floor area of slightly over 200 sq. ft. Installed in the kitchen is an insulated range, a charcoal broiler, a refrigerator, ice chests, meat trays, storage space, several sinks and a number of cupboards. Greater working space is provided in the kitchen which helps to eliminate confusion during rush hours. The kitchen is painted in a light buff and all table tops are of monel metal.

At the entrance to the dining room is a birch buffet for the display of silverware. The two side cupboards in the buffet revolve instead of working on hinges and they may be used without blocking the passageway. At the opposite end of the car from the kitchen is a steward's office furnished with a desk, drawers, lockers and the refrigerated mineral-water locker.

* * * *

Courtesy Southern Railway of England

The First of the "Austerity" Class of Mixed-Traffic Locomotives Developed and Built Last Spring by the Southern Railway of England

No material has been wasted on trim. In the interests of accessibility to the valve motion and running gear, running boards and foot plates have been omitted. The enlarged smokebox permits removal of superheating elements and tubes without disturbing the steam pipes. The locomotive weighs 114,800 lb., all on the drivers. The tractive force is 30,000 lb.

Railroads-in-War News

Scrapping of Ill. Terminal Held Up

Court delays dismantling of line, from which WPB wants rail

Service on 151 miles of lines of the Illinois Terminal Railroad Company, an interurban electric line, was not discontinued on October 10, as was planned when the War Production Board requisitioned the rails, copper wire and other materials for war purposes. The company's embargo was removed on October 9, when Judge W. S. Bodman of the Moultrie County Circuit Court issued a temporary restraining order preventing the discontinuance of service, the order being in answer to a petition filed by the attorney general at the request of John D. Biggs, chairman of the Illinois Commerce Commission.

Also filed with the commission's petition was an affidavit signed by Merrill B. Knox, regional consultant of the Office of Defense Transportation at Chicago, in which he said that "he had no knowledge of any requisition having been made with respect to" the removal of trackage or equipment and that his superiors in Washington have no such order of record. The petition charged that the W. P. B. requisition was "null and void" because it was "made without any approval whatsoever by the Office of Defense Transportation."

Judge Bodman set October 19 as the last date on which the railroad could answer the injunction and said that if such an answer was not satisfactory, a permanent injunction would then be issued against the railroad. The judge said, however, that if the I. T. R. can prove that its rails have been legally requisitioned by a recognized agency of the United States, the temporary restraining order will then be revoked.

A. P. Titus, president of the railroad, stated on October 9 that the carrier would continue service until the controversy is settled. Following the granting of the injunction, Joseph B. Eastman, director of the Office of Defense Transportation, announced that the War Production Board had agreed not to order demolition of the road pending further study by the O. D. T.

The abandonment of these lines extending from Mackinaw Junction, Ill., to Decatur via Bloomington and from Decatur to Danville has become more and more involved during recent weeks. First the railroad petitioned the Illinois Commerce Commission for permission to abandon 26 trains. While this commission was still investigating, the War Production Board requisitioned the rails, copper wire and other materials for war purposes. The Illinois Commerce Commission protested this action because it was taken without consulting with the commission as to the need of the road for public use and because it ignored its state rights and authority. The commission ordered the railroad to continue service and to improve it. The latest move on the part of the commission was to seek an injunction which was granted on October 9.

While the commission was opposing the abandonment, other interests entered the controversy. The Office of Defense Transportation intimated that it had not been consulted, and the director of its local transportation division stated that the division concurred in the order of the commission. When the Metals Reserve Corporation announced on October 8 that it had executed a contract to salvage the line, senators in Washington protested to a Senate Interstate Commerce subcommittee that W. P. B. "is ordering railroad branch lines torn up in various parts of the country without giving the people in affected areas a chance to voice opposition and without determining the needs of the communities in view of truck shortages and tire and gasoline rationing." An investigation was begun.

The lines involved serve a rich agricultural area which produces dairy and poultry products and meats. One portion, 66 miles in length, passes through Mackinaw Junction, Bloomington, Clinton and Decatur. The other, 85 miles long, serves Decatur, Bement, Monticellow, Champaign, Urbana, Ogden and Danville. The lines serve 84 industries, including manufacturers, grain elevators, bulk oil stations and coal and scrap yards. They also provide transportation for several thousand employees of war production plants in the area and an ordnance plant at Illiopolis.

In 1941, the entire system of 671 miles carried 3,930,947 passengers and 6,154,013 tons of freight, the total ton-miles being 380,569,000. Operating revenues amounted to $7,029,936 and the net income amounted to $978,213. The company owns 65 locomotives, including 43 electrics, 1,427 freight cars and 78 passenger cars, including 53 motor cars and 112 miscellaneous cars. In his testimony before the Illinois Commerce Commission, Mr. Titus stated that the lines to be abandoned had not been meeting expenses.

Stops Refrigerator Cars from Peddling Grapes

The Interstate Commerce Commission on October 14 issued Service Order No. 89 which prohibits railroads from allowing the use of refrigerator cars for peddling of wine grapes and juice grapes. The order, effective October 19, was issued because the peddling retarded the "prompt release" of the refrigerator cars used for the grape traffc.

ODT Carloading Order Modified

Revised General Order No. 18 includes new suggestions and clarifications

The revised version of General Order No. 18, which requires maximum loading of freight cars carrying civilian freight, was made public October 14 by Director Eastman of the Office of Defense Transportation. The revised order becomes effective November 1. The original order was issued August 15 to take effect September 15, but on September 4 the effective date was postponed to permit revisions to be made, as provided in the ODT annoucement which accompanied the original order, summarized in *Railway Age* of August 22, page 313.

Under the terms of the revised order, railroads are prohibited from accepting for shipment, with certain exceptions, any freight cars not loaded either to the full visible capacity or to the marked weight capacity stenciled on the car or recorded in the Official Railway Equipment Register. The reference to the "load limit" of cars in the original order has been changed so that the stenciled capacity in pounds is the minimum weight requirement which the shipper normally must meet.

The revised order further provides that bulk freight shipments in closed cars meet the requirements if the load extends "to an elevation not lower than 18 inches from the roof of the car, measured at its side walls, or, if the interior walls of such car are partially sheathed or lined, to the utmost elevation practicable without overrunning the sheathing or lining." Shipments also are acceptable if non-bulk freight in a closed car or either bulk or non-bulk freight in an open car is "loaded so as to occupy and utilize all of the practicable stowage space of such freight car."

As is pointed out in the announcement accompanying the revised order, the ODT Division of Railway Transport receives authority in it to issue special directions to permit loading commodities below the specified weight requirements "to meet specific needs or exceptional circumstances." These special directions and either general or special permits may be issued by ODT to cover situations "with respect to maximum loading when loading will create a transportation hazard, damage lading, cause injury to persons, or is beyond the refrigerating, heating or ventilating capacity of a car, or to prevent undue hardship."

Under the revised order the consignor is not required to make any endorsement

(*Continued on page 623*)

House O.K.'s ODT's Additional $5 Million

Supplemental appropriation will be in addition to $7,000,000 already received

An additional appropriation of $5,200,000 for the Office of Defense Transportation for the current fiscal year ending June 30, 1943, is carried in H. R. 7672, the supplemental national defense appropriation bill which was passed by the House of Representatives on October 8, the same day on which it had been reported from the House committee on appropriations. In reporting the bill, the committee cut $90,000 from the amount of $5,290,000 which had been requested by President Roosevelt, as noted in the *Railway Age*, of October 3, page 538. ODT has previously received $7,216,515 for the current fiscal year.

The committee rejected an Office of Civilian Defense request for $102,000 to be allocated to ODT for the purpose of financing the latter's railway protective program. The amount went out when the committee disapproved the total of which it was a part—the $1,042,000 sought by OCD for allocation to various agencies for the promotion of a program to secure better protection against fire and possible sabotage of private and public (other than federal) plants and projects throughout the country.

Other transport phases of the measure are provisions increasing the limitation in the Interstate Commerce Commission's present appropriation on travel expenses of locomotive inspectors; and those authorizing the War Department, Corps of Engineers, to spend unobligated balances of existing appropriations for work on the enlargement of the Intracoastal Waterway from the vicinity of Apalachee Bay, Fla., to Corpus Christi, Tex. In the former connection, the I. C. C. desired the removal of the limitation in order to increase the subsistence allowance of its traveling locomotive inspectors from $5 to $6 a day, as authorized by Congress last January.

With the reporting of the bill, the testimony offered by various interested government officials at recent hearings before an appropriations subcommittee was made public. There it was brought out that the Florida Ship Canal, like the St. Lawrence Seaway and the Delaware-Raritan canal, has been shelved for the duration. Testifying on the proposed intracoastal waterway improvements, Major General T. M. Robins, assistant chief of engineers, told Representative Cannon, Democrat of Missouri, chairman of the subcommittee, that the canal "is not intended to start at this time on account of the critical materials situation and the equipment and the manpower that would be required." More specifically, Major General Robins did not think construction could start during the war, "unless the materials and equipment situation greatly improve;" and there is "nothing" in the line of such improvement "in sight now." As noted in recent issues of *Railway Age*, President Roosevelt and Secretary of War Stimson, respectively, have made similar pronouncements with respect to the St. Lawrence Seaway and the Delaware-Raritan Canal.

ODT Director Eastman's testimony brought out the fact that most of the $5,290,000 requested for his office was desired for the administration of the certificates-of-war necessity plan for motor vehicles. The breakdown showed $4,770,000 for that purpose, $311,324 for the Division of Railway Transport, and $205,711 for the Office of the Director. The committee did not indicate where it expected the $90,000 to be cut, but reported the recommended appropriation of $5,200,000 in a lump sum, as noted above. The administration of the certificates-of-war necessity set-up, Mr. Eastman told the subcommittee, will involve a total personnel of 2,690—30 in Washington and 2,660 in the field. The committee calculated that on an annual basis, the projected expenditures are "approximately $1.50 per vehicle for the conservation program for the year."

The $311,324 requested for the Division of Railway Transport, Mr. Eastman explained, included $223,168 for personnel, and $81,165 "for travel and that sort of thing, including office expenses." He went on to say that this was an appropriation ODT wanted "for the purpose of being ready for what we fear may be necessary." Elaborating on the latter, Mr. Eastman cited his duty of assuring the "maximum utilization" of domestic transportation facilities. "We have," he added, "already been told by the War Production Board that the expansion of railroad facilities will be held to the absolute minimum. In other words, with the limited supply of critical materials, they are not disposed to allow liberally for new cars or new locomotives. They tell us, 'You must get the utmost use out of the facilities you have on hand before you can get any more,' and it is our duty to see that every available expedient is employed to get the most out of existing facilities."

The ODT director then went on to tell how ODT has acted to get maximum utilization by the issuance of the l.c.l. loading order, and by various orders and activities in connection with the Eastern petroleum movement. Mr. Eastman expects to do more about this oil movement, and some of the proposed appropriation would be used for that purpose. Because "many railroads are involved," the matter needs "some over-all supervision" on the part of ODT, which already has "one or two" men stationed at St. Louis. A few more men are needed at other points, Mr. Eastman said, adding that such men "would also be useful generally." Meanwhile, as the director put it, ODT will avoid appointing the additional men to its rail staff "as long as possible," but it does want to be ready to do so. Aside from those needed to keep on top of the oil movement, Mr. Eastman visualizes the need for men "to keep in proper touch with the motive power situation," with a view "to enabling roads which need motive power to receive help from others, and to see to it that it is all kept in prime condition."

The request for $205,711 for the Office

(*Continued on page 623*)

Dismantling Branch Lines Is Protected

"Conspiracy" by WPB with AAR and "Railroad bankers" is charged at hearing

Hearings in connection with the Senate interstate commerce sub-committee's investigation of War Production Board rail-requisitioning activities were recessed this week after presentations on behalf of railroad labor organizations and Kansas protestants to certain Atchison, Topeka & Santa Fe abandonments had been made. Senator Reed, Republican of Kansas, who has been the most interested member of the sub-committee which is headed by Senator Johnson, Democrat of Colorado, stated that the hearings would be resumed at a date to be announced later.

Appearances before the sub-committee in addition to those noted in last week's issue, page 572, included Senators Hatch, Democrat of New Mexico, and Brooks, Republican of Illinois; J. G. Luhrsen, executive secretary of the Railway Labor Executives' Association; Martin H. Miller, national legislative representative of the Brotherhood of Railroad Trainmen; Richard B. McEntire, secretary of the State Corporation Commission of Kansas; and Bryon Gray of Topeka, Kans.

During the course of the hearing Senator Reed expressed the hope that out of the work of the subcommittee would come some "properly co-ordinated" program in connection with the requisitions. Such a program, the Senator added, was taking shape in his mind. He also remarked that he had asked Director Eastman of the Office of Defense Transportation what kind of an investigation ODT made before certifying to WPB that a line listed for requisitioning was not essential to wartime transportation. The ODT director, Mr. Reed said, replied that all ODT did was to assign someone to inspect the return to the I. C. C. questionnaire which is filed with the commission in connection with all abandonment applications, i.e., ODT's investigation could be only perfunctory.

Meanwhile, the ODT director, who was testifying at another Congressional hearing last week, referred to the requisitioning situation incidentally to suggest that from a legal standpoint a road whose rails were requisitioned by WPB in cases where the I. C. C. had not authorized abandonment was under obligation to replace the rails and operate the line after the war.

Senators Hatch and Brooks appeared before the Senate subcommittee to protest against procedures in connection with requisitionings in New Mexico and Illinois. Then came Mr. Gray, who began his lengthy presentation, but then gave way to the railroad labor representatives and returned later to develop his theory to the effect that there is a real incentive for prosperous roads to abandon lines now when the accounting for such abandonments will bring substantial savings in excess profits taxes.

Executive Secretary Luhrsen of the Railway Labor Executives' Association said

that his organization is not opposed to any "legitimate" undertaking by the government to supply all the necessary rails or materials needed for the war effort; but it has been "much exercised" about some of the requisitioning activities. Mr. Luhrsen submitted from I. C. C. records data which he interpreted as showing that the number of abandonment applications increase rapidly after the issuance last April of President Roosevelt's executive order under which the requisitioning is done. The "numerous" abandonment proceedings set for hearing between August 3 and August 26 indicated to Mr. Luhrsen that "someone was working fast."

It was his position that the rail needed should first be sought in those lines proposed to be abandoned by the railroads without protest from the labor organizations and with "little or no public protest." Lines in that category totaled 1,000 miles of the 4,000 miles with respect to which abandonment applications were filed between April, 1941, and September, 1942, he said. The R. L. E. A. executive secretary also submitted a compilation of reports which his organization has received from railroad employees who have spotted unused rail and other material at various points in the territories where they work. The compilation had been submitted to WPB. It was Mr. Luhrsen's view that "if all of this material is first absorbed there will be little, if any, need for abandonment of present properties which are exceedingly useful to the general welfare of the public."

Chairman Johnson asked if it would not be possible for some "live wire" to go out with roadmasters and spot "almost unlimited amounts" of unneeded rail. Mr. Luhrsen agreed, adding however that such a plan would require a large force. Also, he thought it would be unnecessary because "our people are not missing very much, and they're going to find plenty." Mr. Luhrsen also assented when Senator Johnson suggested that railroads desiring to get rid of branch lines have found a "Roman holiday" in the requisitioning drive.

National Legislative Representative Miller, of the B. of R. T. emphasized the viewpoint of his organization that the WPB procedure is unfair and unreasonable because people affected by the requisitioning orders are neither given notice that they are under consideration nor allowed an opportunity to present data to support their convictions as to their propriety. In his opinion this procedure tends to discourage and embitter people affected by abandonments and so impedes their contribution to winning the war. In effect, he stated, the WPB is acting in "conjunction and conspiracy with the Association of American Railroads and the railroad bankers" in enabling the railroads to rid themselves of their less profitable lines without notice to the people and without following the normal legal channels.

Secretary McEntire, secretary of the Kansas Corporation Commission made a brief statement urging that requisitioning orders, if necessary to the war effort, should result from administrative determination based on public hearings. Senator Reed of Kansas remarked that in the case of certain Santa Fe branch lines in his state which it is proposed to abandon the ODT charged with the responsibility of "clearing" such applications from the standpoint of the essential wartime importance of the lines affected—had sent no representative to examine the situation in the field, but had depended on a study of maps and documents in Washington as a basis for decision. In fact, he added, there appeared to have been a lack of co-operation and co-ordination between the government agencies involved in requisitioning procedure, but new arrangements apparently are in process that may meet some of the objections that have been offered.

Transportation Corps Training Schools

Two new schools for the training of Transportation Corps officers and one for the instruction of officer candidates for the same service will be established soon, the War Department announced this week.

The schools for the training of commissioned officers will be located at Fort Slocum, New Rochelle, N. Y., and at Camp Stoneman, near Pittsburg, Calif. The officer candidate courses will be conducted at the Administrative Officer Candidate School, Mississippi State College, Starkville, Miss.

The first complement of 250 men attending the officer candidate school will be drawn from the army at large and the qualifications will be those usually required for acceptance at officer candidate schools. Candidates for subsequent classes must have had at least three years' experience in business administration or in some division of the transportation field.

Those attending the New York and California schools will be officers of the Transportation Corps and "extensive previous experience in the transportation field is required for admission." Each class will be limited to 100 trainees and the six-weeks' course will include four weeks of basic military training and two weeks of technical training. The course at the officer candidate school will extend over 13 weeks and graduates will be commissioned as second lieutenants.

OPA Amends Tie Order

Purchasers of railroad ties have been granted additional time for filing with the Office of Price Administration required information regarding purchases in the first quarter of 1942 and for filing applications for adjustment.

In Amendment No. 1 to Maximum Price Regulation No. 216 (Railroad Ties), issued October 9 with an October 15 effective date, OPA extended two filing deadlines. Set back from October 1 until November 1 is the time within which persons who bought railroad ties between January 1 and March 31, 1942, must submit information concerning such purchases. The other extension permits purchasers to file applications for adjustment within 60 days of the effective date (September 5, 1942) of the regulation instead of 30 days.

ODT Appointments

Frank T. Mahoney has been appointed supervisor of rail terminals at Kansas City, Mo., under the Division of Railway Transport, Office of Defense Transportation. He was formerly superintendent of the Kansas City Terminal division of the Missouri Pacific.

Other appointments to the position of supervisor of rail terminals have also been announced by the ODT. Daniel E. Clifford, former salvage agent of the Texas & Pacific, will be supervisor at El Paso,

* * *

Boston & Maine's Unusual "Service Flag" Unveiled in Boston

Edward S. French, president, pulls the ropes disclosing stars representing 1051 men in the armed forces (6.6 per cent of the road's employees) and 4 who have died in service. The ceremony took place in the main concourse of North Station, Boston, Mass., on October 1.

Texas; John C. Nolte, who has been terminal train-master of the Western Pacific at Stockton, Calif., will be supervisor at Salt Lake City, Utah; and J. E. Nusz has the same position at Mobile, Ala.

In the Division of Transport Personnel, Elton D. Woolpert has been appointed to handle transport personnel training matters in cooperation with the established training agencies of the War Manpower Commission. Mr. Woolpert was formerly assistant director of training, International City Managers' Association, Chicago.

Port Shipments Without Permits Must Stop, Says ODT

"Vigorous enforcement measures will be taken against carriers who continue to transport freight to shipboard for offshore destinations without the permits required under General Order No. 16," said an October 14 statement from the Office of Defense Transportation.

Instances of carriers, particularly trucks in the New York area, accepting export shipments without permits, especially shipments of local origin for delivery to docks or ships, have been reported to ODT, the statement added. It went on to point out that under General Order No. 16 this is expressly forbidden; and that the burden of responsibility rests upon the carrier to make certain that every ton of freight moved to or within a port area is covered by a valid permit.

New York Central Raises Flag for Employees in Armed Forces

A service flag in honor of 11,098 employees of the New York Central system who have entered the armed forces of the United States was raised October 14 in the Grand Central Terminal, New York. F. E. Williamson, president of the railroad, was the principal speaker at the brief ceremony, at which members of the Commodore Vanderbilt Post and the Newfoundland Post of the American Legion were present.

The flag, measuring 18 ft. by 26 ft., hangs on the north balcony of the terminal, across the grand concourse from the huge American flag which was raised at the entrance to the waiting room immediately after the United States entered the war. Dedication of the service flag preceded by fifteen minutes the opening of the new service men's lounge on the east balcony of the terminal.

R. E. A. Will Pick Up Excess Tires for Government

The Railway Express Agency was this week designated by the Office of Price Administration as its agent for picking up excess tires and any other new or used tires which automobile owners may wish to sell to the government. Under new OPA rules, gasoline rations will be issued only after car owners have certified that they have no more than five tires in their possession for each car; and the government will purchase the excess tires at OPA ceiling prices.

"The Railway Express Agency, with 23,000 offices throughout the United States," the OPA announcement said, "has been designated to collect tires and transport them to the warehouses. To sell his tires to the government, the individual only has to telephone or write the Railway Express Agency office nearest his home, and a truck will be sent to pick up the tires. . . . In areas where the Railway Express Agency does not maintain pickup service, the tire owner will take his idle tires to the agency office." R. E. A. began the service on October 15.

ODT Mechanical Officer

Charles J. Wolfe has been appointed associate director of the Division of Railway Transport of the Office of Defense Transportation, in charge of the Mechanical section, as reported in the *Railway Age* of September 12. Mr. Wolfe was born at Cumberland, Mo., on August 6, 1893, and entered railroad service on June 1, 1905, as office boy in the motive power department of the Western Maryland at Ridgeley, W. Va. He served successively as engine wiper, oil house boy, drill press hand, machinist apprentice, brakeman at Ridgeley, machinist at Cumberland and machinist gang leader until March, 1920, when he became general foreman of the motive power department at Bowest, Pa., transferring to Baltimore, Md., in May, 1920. Mr. Wolfe was appointed mechanical superintendent at Baltimore on January 1, 1931, and on February 1, 1934 he became master mechanic at Baltimore, being transferred to the Hagerstown (Md.) division in November, 1934. He was appointed superintendent of motive power at Hagerstown on April 1, 1935, which position he held until his recent appointment.

Harris & Ewing

Charles J. Wolfe

Anti-Inflation Law Delays Rate Adjustment

Acting upon the petition of the railroads which needed the additional time to comply with the recently-enacted anti-inflation legislation, the Interstate Commerce Commission, this week postponed from October 15 until November 15 the effective date of its order in I. & S. No. 4786, prescribing estimated weights and rates on citrus fruits from Florida, Texas, California, and Arizona to destinations throughout the country.

The railroad petition pointed out that the prescribed adjustment would involve some increases in rates, thus making it subject to that provision of the anti-inflation legislation which forbids increases above September 15 rates unless 30-days notice is given to the President or such agency as he may designate. As noted in the *Railway Age* of October 10, page 572, the President has designated former Supreme Court Justice James F. Byrnes, director of the Office of Economic Stabilization, as the agency to receive such notices.

Scott Says Truckers Must Coordinate—or Else

Confessing that he has been "somewhat disappointed" that so few joint information offices have thus far been set up, Jack Garrett Scott, general counsel of the Office of Defense Transportation, last week warned the motor trucking industry that unless a greater effort is made to coordinate operations and conserve equipment in line with ODT orders and policies, more drastic government controls may be necessary. Mr. Scott spoke thus on October 9 before the Michigan Trucking Association at Grand Rapids, Mich.

In addition to expressing his disappointment over the slow development of the joint-information-office set-up, Mr. Scott also criticized the truckers for failure to submit more joint-action plans under the anti-trust clearance arrangements agreed upon by the Department of Justice and ODT. With respect to the joint information offices, the ODT general counsel is sure that a "widespread" system is essential, and that if the carriers do not go along the ODT will be compelled to do the job. "If that comes to pass," Mr. Scott said, "I can visualize activities for the offices which will go far beyond the mere exchange of information and perhaps get into the field of dispatching and traffic control."

Says Army Officers Tie Up Pullman Reservations

Citing one case wherein "an Army officer traveling on his own had three reservations for himself in the same car," Representative Taber, Republican of New York, recently suggested to Director Eastman of the Office of Defense Transportation that ODT "should not permit that kind of priority" in these times when Mr. Taber said his office has received complaints that people working "in connection with Army requirements" have been unable to obtain Pullman accommodations for trips "which were necessary." The suggestion came while Mr. Eastman was testifying before a House appropriations subcommittee on ODT's request for a supplemental appropriation of $5,290,000; and the ODT director was "glad to be informed of that situation," because the information would "be a help, in checking it up."

Mr. Taber explained that the three reservations held by the officer included "one obtained through General Marshall's office, one from the local railroad office and one

by a wire from the Washington office." Meanwhile, as Mr. Taber put it, the railroad "did not dare to sell any of that space" until after the officer got on the car. The New Yorker knew of another situation where accommodations could not be obtained in a sleeper where "there were two separate Army or Navy officers occupying sections."

Mr. Eastman explained that ODT has "no system of formal priorities at the present time." He added, however, that there is an "informal system" which does not depend on any ODT order, and which operates this way: "There is an arrangement in effect under which the railroads reserve until a certain time a certain number of accommodations for certain departments, that is for people traveling to and from Washington, not only men in the departments, but people they call in here."

Eastman Urges Use of Water Carriers Where Possible

Declaring that "everything possible must be done to prepare for the increased load which is coming upon the railroads," Director Eastman of the Office of Defense Transportation has urged shippers and all government agencies to utilize water carriers where possible.

In a circular to all government agencies, Mr. Eastman pointed out that the railroads are carrying a freight traffic load which is running about 30 per cent ahead of 1941 as measured by ton-miles. "Our estimates look forward to a continuing increase in rail tonnage through 1943 as a result of the war production program and changes in the character of the movement of traffic," he said. The ODT director went on to emphasize the difficulties of obtaining materials for expansion of railroad facilities, adding that "any allocation of material for new freight cars and locomotives will be based on the premise that other available means of transportation will be fully utilized."

Meanwhile, he said, the inland barge lines and a number of water carriers operating along the Atlantic and Gulf intracoastal waterways "are not being fully utilized," and "it therefore becomes necessary that I urge not only shippers, but also governmental agencies, to instruct full utilization of water carriers where possible, thereby relieving the railroads and the truck lines of their burden."

I. C. C. Service Orders

The Interstate Commerce Commission, Division 3, has issued Service Orders Nos. 87 and 88 which in turn suspend certain Trunk Line Tariff Bureau rules relating to demurrage on coal cars, and require railroads serving Memphis, Tenn., to make joint use of terminal facilities. Also, the commission has issued Amendment No. 2 to Service Order No. 86, suspending additional tariff provisions and extending to include Oregon, Washington, Idaho, Utah and Nevada, the order's provisions requiring railroads to place so-called giant-type refrigerator cars for loading without restrictions or rate penalties on the use of such cars.

Service Order No. 87 was issued October 8 to become effective November 1. Its tariff-suspending paragraph reads as follows: "The operation of demurrage rules contained in Trunk Line Tariff Bureau Tariff No. 139-C I. C. C. No. A-751, and supplements thereto, is hereby suspended, to the extent that the free time allowed on cars loaded with bituminous and cannel coal and the coal products described in said tariffs exceeds six days; that the average free time on cars delivered to storage plants for subsequent delivery to vessels exceeds three days; that the settlement period for the average account exceeds three months; and that the operation of all of the provisions of said tariff inconsistent with this order is hereby suspended."

The order relating to Memphis terminal facilities becomes effective October 23. It requires the Chicago, Rock Island & Pacific, Illinois Central, Louisville & Nashville, Missouri Pacific, Nashville, Chattanooga & St. Louis, St. Louis-San Francisco, St. Louis Southwestern, and Union to make such joint use of the 4,000-ft. of track between Main Street Crossing and the Harahan and Frisco bridges across the Mississippi river "as will result in the best and most expeditious movement" of locomotives and cars. Also, the Rock Island, I. C., L. & N., N. C. & St. L. and the Southern are required to make similar arrangements for operations over yards and tracks owned or used by them, including tracks owned by the N. C. & St. L. and the double-track line owned by the Southern extending between Tower "B" and Kansas City Junction, a distance of about 2.7 miles.

Minimum Carload Order in Canada

Maximum loading of freight cars with the object of conserving railway equipment, power and other transportation facilities will follow as the effect of an order issued by T. C. Lockwood, Canada's transport controller at Montreal.

The order will become effective November 1 and was adopted following a conference at the office of the transport controller. After discussion the order was approved by those present at the conference, including Thos. Marshall, traffic manager, Toronto Board of Trade; C. S. Eccles, secretary, Transportation Bureau, Winnipeg Board of Trade; J. G. Bowles, traffic manager, Montreal Board of Trade; W. A. Rundle, traffic manager, Vancouver Board of Trade; L. M. Reilly, chairman, Maximum Loading Committee, Canadian Industrial Traffic League, Toronto; Rand Matheson, manager, Transportation Commission Maritime Boards of Trade, and S. B. Brown, manager, Transportation Department, Canadian Manufactures Association; together with the traffic and operating representatives of the Canadian railways and the Railway Association of Canada.

This carloading order will be somewhat similar to that recently announced by the

* * *

Dreaming of Increased Efficiency

"Last Night I Dreamed the Railroads Had Taken Over the Government"

Office of Defense Transportation in the United States. Under the order no rail carrier shall accept for transportation at point of origin or points of trans-shipment in the Dominion of Canada or forward therefrom any carload of freight unless the car containing such freight is loaded to the stenciled or visible capacity of the car.

It is also provided in the order that special or general permits may be issued by the transport controller to meet specific needs or exceptional circumstances, and to avoid controversies as to loading which may create transportation hazards and cause damage to lading or injury to persons.

Among the general exceptions to the order is one that exempts shipments by or consigned to any establishment or agencies of the Canadian, British or Allied armed forces or governments, or shipped from or to shipbuilding plants operated by or on behalf of the Canadian, United States or British Governments in Canada.

ODT Carloading Order Modified

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on the shipping instructions or attach any certificate thereto when the loading meets the requirements of the order. When the loading departs from the provisions of the order, however, the shipper is required to endorse on the shipping directions a certificate that specifies the exceptions that apply or the number of the ODT special or general permit that provides for such departure. "The failure of a consignor or his agent to endorse such exception on the shipping instruction shall constitute a representation by the consignor to the rail carrier that the car containing such shipment has been loaded in compliance with the provisions of the order."

A "stop off" provision is included in the revised order, under which the carrier is required to permit at least one stop in transit of a car between origin and final destination to enable the shipper either to complete his loading or partially to unload. Another provision, continued from the original order, provides that carriers and consignors, not exceeding three, may consolidate in a single car two or more carload shipments of the same or different commodities from not more than three points of origin to not more than three consignees at from one to three destinations in the direct line of movement.

Certain classes of freight are exempted from the provisions of the revised order. These include: (a) Freight shipped by or consigned to the armed services; or shipments wholly or largely composed of certain munitions, military vehicles, ordnance materials, and marine equipment; (b) tariff minimum carload shipments of commodities allocated by government order under conditions that preclude compliance with the ODT order; (c) explosives; (d) freight moving under "cleanout" or "gathering" rates and rules established in tariffs; (e) shipments loaded in cars not acceptable for interchange under MCB rules; (f) cars to be unloaded in Cuba; (g) livestock and poultry; (h) cotton or cotton linters, in bales; (i) a rail carrier's own material when loaded by the carrier and moved over its own lines; and (j) carload shipments authorized by special permit issued by a carrier's chief operating officer or his representative where unusual circumstances would lead to inefficient use of equipment under the provisions of the order. Weekly reports of all such special permits must be sent to the ODT.

The revised order does not apply to tank cars, flat cars, and cars containing l.c.l. freight, in this respect following the terms of the original order.

Supplementing the revised order, the ODT Division of Railway Transport at the same time issued Special Directions No. 1 and 2, which also become effective November 1. Special Direction No. 1 modifies the provisions of the general order with respect to the extent to which cars must be loaded with certain commodities, including seed, various grain products and by-products, corn, soybeans, coal in closed cars, liquids in metal drums, cement in bags, peanuts and dried beans or peas in bags, sewer pipe, glass, evaporated milk, tobacco in hogsheads, lime in containers or in bulk, ground limestone, rosin, turpentine, citrus fruits, salt in containers, potash, and dry ice. Special minimum requirements are established for each of these commodities.

Special Direction No. 2 modifies the loading requirements of the general order as applied to carload shipments which move partly by water, thence by rail, or to rail-water-rail movements.

N. Y. Central President Greets New Employees

Each new employee entering the service of the New York Central is being given a circular letter from President F. E. Williamson, welcoming him to the service, and bespeaking his co-operation in the important work the carrier is doing toward winning the war. The letter reads as follows:

"By reason of the war traffic we are now handling and because of the many vacancies resulting from employees entering the armed services we have engaged many new employees in the past year. I wish to extend a hearty welcome to our new employees and to express the hope that your relationship with the New York Central System will be mutually satisfactory. We hope you will view your relationship with our New York Central family as something more than a job and a pay check—we hope it is the beginning of a long and successful railroad career.

"Your employment carries with it the responsibility which all of us share, as employees, for the success of the company at a time when such success is very important in the prosecution of the war. Railroading was never easy—it is not easy now, but success awaits every employee who is willing to devote himself to his work, who is willing to learn, to co-operate with his fellow employees and supervisors and to work hard. On our part we promise you fair treatment and the regard and respect that is due a capable workman.

"Our experienced employees, your supervisors and foremen will be glad to help you get acquainted with your fellow employees, to acquaint you with the policies of the company and to instruct you in the requirements of your job. Do not hesitate, please, to ask questions. I am confident that you and all of us realize the need for putting our shoulder to the wheel now as never before, knowing that we are helping to transport goods essential to the war effort, troops and equipment, and civilians who are aiding the war effort, while at the same time we are paying taxes and buying war bonds, thus helping our government to pay the war bill.

"The future of our railroad and the industry following the war will depend to a large extent upon the efficient service which we render today and the friends which we make now by rendering to the public courteous and efficient service. I am confident that we can count on you to do your part to the end that we may enjoy the benefits which must inevitably result from mutual confidence and co-operation."

House O.K.'s ODT's Additional $5 Million

(*Continued from page 619*)

of the Director, as Mr. Eastman put it, was another case "where we wanted to get under the wire and be ready"; it is a matter on which his mind "has not come to rest." In other words, the proposal is to have nine over-all representatives in ODT regional offices; and Mr. Eastman would like to get these men (who would be his personal representatives) on a non-compensation basis. He is "not at all certain" that he cannot get as volunteers "men of high standing in the community who want to do some work in connection with the war and who have the necessary character and experience." The tentative plans for creating such a set-up grew out of complaints on the part of the public that there is no place where they can go to find out about all phases of ODT's work.

"We are trying to cure that by putting all of our men in any city under one roof," Mr. Eastman said. "I have not felt that we could put men engaged in different kinds of work under a single field boss. Control is centralized ultimately in Washington, but a railroad man cannot supervise the motor carrier field work, or vice versa. It might be well, however, for me to have in each designated region a man in the nature of a personal representative to keep me informed as to how the field work is progressing in the various branches, how the public is responding to the work, and what improvements could be made."

The rejected OCD request for $102,000 to be allocated to ODT protective work was discussed at the hearing by Patrick B. McGinnis, who was recently appointed executive administrator of ODT's newly-established Railway Protective Section. As Mr. McGinnis explained it, ODT planned to use the money for the purpose of "intelligently correlating and tightening present protective activities." He referred to the "great deal of confusion" which results from differences of opinion between various interested government agencies among themselves, and between such agen-

cies and railroads, as to the measure of protection specific railroad facilities require. Mr. McGinnis thought that "some central agency, having access to the Army, the Navy, and all the other agencies, can make all security activities more effective," while at the same time minimizing calls upon the railroads. The committee took the position that the primary responsibility for protection of the facilities involved is that of the owners.

"The rejection of the Budget estimate," the report said, "does not indicate any lack of sympathy or interest in the objective sought. The committee is of the opinion that the private and local public management of these projects is aware of the situation and in many instances amply qualified by technical experience to take remedial steps if fully advised of the necessity. The committee feels that, instead of the employment of a large group of traveling technicians whose visits in many cases may be long delayed in reaching all plants, an educational campaign directed to the ownerships calling forcibly to their attention the need for examination of their protective measures and advising them to secure technical advice and following that up with a requirement to report their action with respect thereto would have an effect almost as wholesome as the proposed program."

Testimony in connection with the increase in the limitation on travel expenses of I. C. C. locomotive inspectors was given by I. C. C. Secretary W. P. Bartel and J. M. Hall, director of locomotive inspection. Mr. Bartel explained that the request did not involve any additional appropriation, although he did say that a subsequent request for more money would perhaps be involved. Discussing locomotive inspection work, Director Hall said that, when World War I came, the condition of railroad motive power was "terrible," 55 per cent being defective. When the present war came, the number defective had been reduced to nine per cent. He gave those figures, he said, to indicate the value of the inspection work.

St. Lawrence Will Surely Be Built Sometime, Says Roosevelt

President Roosevelt told his October 9 press conference that the decision to postpone for the duration construction of the St. Lawrence seaway and power project was entirely a military decision and did not indicate, as a questioner put it, that the President had "thrown down" the project. On the contrary, Mr. Roosevelt feels that if we win the war, there will some day without question be access from the Great Lakes to the Atlantic Ocean.

The subject came up when a newspaperman told the President that the Administration's attitude toward the project had become something of an issue in the New York gubernatorial campaign. Mr. Roosevelt's first reaction was to point out that the background of the question was political, and he went on to assert that he had long since ceased to think of the St. Lawrence project as a political issue. The President then continued to say that the setting for the proposed development is one wherein the United States and Canada have a great river connecting the largest bodies of water in the world. Because of certain physical barriers, such as rapids, he added, the two countries have been unable to make full use of that river to obtain what is the cheapest form of transportation.

Thus while Mr. Roosevelt doubts that construction can be commenced during the war, he insisted that this military decision does not in any way change the broad aspect of connecting the lakes with the ocean.

768,924 Barrels of Oil to East in October 3 Week

Tank cars moved 768,924 barrels of oil daily to the East Coast area during the week ended October 3, a reduction of approximately eight per cent under the daily volume moved during the preceding week, according to Petroleum Coordinator Ickes. Forty-one companies loaded 25,389 tank cars during the week, and the total movement was 5,382,468 barrels.

Commenting on the drop under the previous week, Deputy Petroleum Coordinator Davies had this to say: "An important factor was the disastrous wreck on the Baltimore & Ohio which delayed the movement of several hundred tank cars scheduled for arrival and departure from a number of major Eastern terminals. The wreckage and the time required for repairs made it necessary to reroute both Eastbound loaded cars and empty cars returning. Also, shipment origins for part of the crude oil normally delivered to the Eastern states from Louisiana have been shifted to producing areas in Texas, because of need for certain types of crude oil. Moreover, there has been an accelerated diversion of tank cars from petroleum transport service to seasonal transport of vegetable oil and related services as required under War Production Board tank car priorities."

Meanwhile Mr. Ickes this week assured the governors of the six New England states that their section would receive "its equitable share of all the fuel oil available to the Eastern states this winter." The governors who were in Washington for a meeting with Deputy Coordinator Davies were told, the OPC announcement said, that the tank car fleet now serving New England is being augmented to the extent of 450 cars daily, so that approximately 1,300 cars will be moving into the region each day. At the same time it was pointed out that "the number of cars serving the seaboard area is subject at all times to such factors as bad weather, wrecks, required diversions to military and other service, disrepair and other unpredictable factors."

With respect to all-rail coal shipments into New England, Mr. Ickes who is also solid fuels coordinator gave the total for the week ended October 3 as 6,513 cars, carrying approximately 358,215 tons. This was 808 cars or approximately 44,275 tons above the comparable 1941 week.

Materials and Prices

The following is a digest of orders and notices of interest to railroads, issued by the War Production Board and the Office of Price Administration since October 2.

Concrete buildings—Directive No. 9, signed by Donald M. Nelson October 5, authorizes a manual of specifications governing the use of reenforcing steel for all buildings which are constructed, financed or approved by governmental agencies on contracts placed after December 4, 1942. The manual was developed under the direction of the Specifications Branch of the Conservation Division. The allowable compressive unit stresses in concrete have been reduced, thus requiring larger structural members, with corresponding reductions in the amount of reenforcing steel needed. Further economy in the use of reenforcing steel is obtained by increasing the allowable unit tensile stress from 18,000 lb. per sq. in. to 20,000 lb. per sq. in. for structural grade bars and from 20,000 lb. per sq. in. to 24,000 lb. per sq. in. for intermediate and hard grade bars.

Forms—All forms used by WPB to obtain information have been reviewed by a special committee and 120 eliminated and 132 simplified. No division or branch of WPB may issue a form requesting information from industry without approval by this committee and the Bureau of the Budget. After a stock of the older forms is used, no form may be used unless it bears the Bureau of Budget stamp of approval. A list of forms which continue in use will be published in Priorities, available for inspection at all district and regional offices about October 15. Before filling out any form not listed in Priorities, companies should write to the Committee for the Review of Data Requests from Industry, Social Security Building, Washington, D. C., to find out if use of the form is still required. All forms are being redesigned to fit a standard carriage typewriter.

Hacksaws—Amendment No. 1 to General Preference Order E-7, issued October 6, provides that hacksaws containing no alloying elements other than specified percentages of molybdenum and tungsten may be purchased, sold and delivered without preference rating. The limit on tungsten is 1.25 per cent and the limit on molybdenum is 0.75 per cent. The blades cannot be more than 0.025 in. thick or more than 12 in. long.

Lumber—Amendment No. 2 to Conservation Order M-208, controlling the distribution and use of all types and grades of softwood lumber, provides, effective October 5, that no preference rating is assigned by M-208 to any delivery of softwood lumber if the user is entitled to apply or extend a preference rating assigned on any other preference rating order or certificate. The amendment also makes minor adjustments of classifications and adds certain grades of softwood lumber to the restricted categories as follows: Southern pine, Douglas fir or Western larch sold as meeting specifications of 1,800 or 2,000 lb. fiber stress per sq. in., or 1,300 or 1,450 lb. compression stress, except on Class 1 orders; Southern pine, Douglas fir, cypress or Western larch sold as meeting specifications of 1,400 or 1,600 lb. fiber stress per sq. in., or 1,100 or 1,200 lb. compression stress, except on Class 1 or Class 2 orders; Douglas fir, West Coast hemlock, noble fir or Sitka spruce of grades No. 1, No. 2 or any higher common grade, except on Class 1, Class 2 or Class 3 orders; Southern pine of grades No. 1, No. 2 or any higher common grade, or of No. 1 box or No. 2 box (not including B or better flooring, ceiling, drop siding or partition), except on Class 1, Class 2 or Class 3 orders; Idaho white pine, Northern white pine, Eastern white pine, Norway pine, ponderosa pine, sugar pine, lodgepole pine, jack pine cypress, white fir, Eastern hemlock, Englemann spruce or Western white spruce of grades No. 2 or No. 3 common, except on Class 1, Class 2 or Class 3 orders; Eastern spruce of grades selected merchantable and grade No. 1 (merchantable), except on Class 1, Class 2 or Class 3 orders. The original order provided for only a 60-day inventory and required use by the consumer within 60 days, or 120 days in the case of green lumber. The amendment removes this restriction from producers, sawmills and concentration yards. A producer is defined as any plant which proc-

esses, by sawing, edging, planing or other comparable method, 25 per cent or more of the total volume of logs and lumber purchased or received by it.

Material requirements — Production Requirements Plan application form (PD-25a) for the first quarter of 1943 were approved for mailing to manufacturers, on October 6. Manufacturers are expected to return the completed applications for the first quarter of 1943 by October 25 so that it will be possible to analyze and process them in time to return the completed certificates before the beginning of the first quarter of 1943. Instructions for filling out the new forms are contained in a separate bound booklet. A Fabricated Product Classification List divides the more important fabricated items into approximately 400 groups. It provides standard terminology for designation of the products which must be entered under Section B of PD-25a. Applicants are requested to use the terminology of the list wherever it is applicable, and are warned not to combine products which fall into more than one of the listed classes. Shipments and requirements for a line which falls into two or more classes must be divided. Also, an applicant should be careful not to use the terminology of the classification list unless it is literally true of a given product. When this is not the case, the applicant's own definition should be written in.

Priorities—Priorities Regulations Nos. 3, 11 and 12, governing the extension of preference ratings, use of ratings by companies under the Production Requirements Plan and reratings, were amended October 5. Under Regulation Nos. 3 and 12, as amended, the former restriction which allowed the extension of ratings only for such operating supplies as would be actually consumed in processing production materials to which the same ratings were applied, is removed. The new regulations provide simply that a person who is not a PRP unit may extend ratings for operating supplies in any month up to 10 per cent of the cost of production materials to which the same ratings are extended during the months. Items for repair of production machinery are included in the definition of operating supplies. In the new definition, materials such as small hand tools are generally considered operating supplies. It also permits extension of ratings for operating supplies in cases where the customer provides the materials to be processed. Under Regulation No. 11, as amended, companies operating under the Production Requirements Plan are given the privilege of extending ratings served on them instead of using the ratings assigned on their PRP certificates to obtain materials which are not included in the materials list accompanying the PRP application. This change allows extension of ratings for obtaining parts and sub-assemblies, since the materials list is confined chiefly to raw materials. The privilege of extending ratings is confined to materials which would be incorporated in the product, and may not be used for operating supplies. The privilege of extending ratings instead of using the ratings assigned on a PRP certificate is available to PRP units only for the fourth quarter of 1942. A PRP unit wishing to use this alternative procedure must decide to do so not later than the seventh business day after receiving its fourth-quarter PRP certificate. Regulation No. 12, as amended, cancels the permission formerly granted PRP units to revise their own rating pattern twice a month on the basis of the ratings appearing on their unfilled orders. PRP units which have received or may receive high rated orders which would have allowed them to change their rating pattern under the old procedure may take advantage of the amendment to Regulation No. 11 which permits them to extend ratings for materials not appearing on the materials list. Hereafter, a PRP unit will not be restricted by its PRP certificate in the quantities of other materials which it may receive, but will remain subject to the general inventory restrictions of Priorities Regulation No. 1.

Surplus steel—The Steel Recovery Corporation, 5835 Baum Blvd., Pittsburgh, Pa., began on October 7 to mail inventory certification forms to known and presumed holders of steel stocks rendered idle or excessive as the result of WPB orders and regulations. The forms are simple one-page sheets on which recipients will indicate whether they hold steel inventories and, if so, the types of iron and steel of which they consist. Following receipt of the information, WPB will mail detailed questionnaire forms to cover each type reported, together with schedules of prices to be paid by the government for material needed for the war effort. The Steel Recovery Corporation, organized in August to carry out the purchase and redistribution program arranged by WPB as agent for Metals Reserve Company, will handle all fiscal matters involved in the transactions.

Prices

Aluminum scrap—Amendment No. 2 to Revised Price Schedule No. 2 (as amended), effective October 16, established a maximum price of 1.2 cents per lb. for aluminum drosses, skimmings, grindings, sweepings, savings and spatters containing less than 15 per cent by weight of metallic aluminum.

Coal—Amendment No. 36 to Supplementary Regulation 14, issued October 5, extends for another two months temporary maximum prices applicable to the transportation of bituminous coal by barge from Hampton Roads to New York and New England and from New York to New England as established August 1. The rates, which take into consideration increased shipping costs, were originally established in Amendment No. 4 to Supplementary Regulation 14 under the General Maximum Price Regulation.

Price adjustments on bituminous coal produced in eight Central Illinois mines were authorized October 5. Domestic sizes 1, 3 and 6, produced for shipment from the mines by truck to nearby neighborhoods, were reduced from 5 to 25 cents per net ton, while the maximum prices for industrial sizes for shipment by truck were increased by amounts ranging from 10 cents to 45 cents per net ton. Size group 14, industrial coal for shipment by rail, was increased from $1.45 to $2 per net ton.

Cross ties—Amendment No. 1 to Maximum Price Regulation No. 216 (railroad ties), issued October 9, postpones from October 1 to November 1, 1942, the time within which persons who bought railroad ties between January and March 31, 1942, must submit information concerning these purchases, and permits purchasers to file special applications for adjustment within 60 days of the effective date (September 5) of the regulation instead of 30 days.

Fuel oil—Order No. 4 under Revised Price Schedule 88 (petroleum and petroleum products), effective October 10, requires refiners and terminal operators to file the lists showing invoices for the spot sales in bulk of all petroleum and petroleum products, except aviation gasoline and asphalt. The lists must be filed within 30 days after receipt of notice, and must show actual prices at each shipping point where a sale was made. This information is needed to permit compensatory adjustments for extra transportation costs in moving gasoline and other petroleum products to the Eastern seaboard. The increased costs are paid by the government.

Explanations of the fuel oil rationing plan being applied in 30 Eastern and Midwest States, issued October 11, announced that the oil includes all grades of distillate and residual fuel oils, kerosene and diesel fuel.

Lumber—Amendment No. 8 to Maximum Price Regulation No. 146 (Appalachian hardwood lumber), effective October 15, contains a pricing formula for non-recurring items which cannot be specifically priced by the measure, and provides that the seller must report to OPA details of all transactions in this special stock within 30 days. In reporting the price to OPA, the producing mill must show the amount charged for the stock before deducting the discount allowed the wholesaler. The maximum price which the wholesaler may charge is the maximum mill price.

Amendment No. 2 to Maximum Price Regulation No. 97 (Southern hardwood lumber), effective October 10, revokes the provisions regarding pricing of so-called recurring and non-recurring special grades and substitutes one procedure for all special grades and items of Southern hardwood. This modification was proposed by the Southern Hardwood Industry Advisory Committee. The amendment places all special stock under the same pricing provision, simplifying the method for establishing maximum prices for this stock.

Amendment No. 2 to Maximum Price Regulation 19 (Southern pine lumber), effective October 8, permits pricing adjustable to the maximum price at the time of delivery and to the maximum price fixed by any amendment which may be issued before December 1, even if deliveries are completed before that date. If so agreed by the parties, contract prices need not be revised downward to the new maximum prices if these are lower. The order was issued to prevent suspension of bids and deliveries of Southern pine during a period when immediate procurement and delivery of lumber is critically needed in the war effort.

Machines—Amendment No. 25 to Maximum Price Regulation No. 136, effective October 9, announces that any sale or delivery at retail of a machine or part by a person other than the manufacturer is excluded from the pricing provisions of the order. The original definition of sales at retail was subject to the misinterpretation that wholesale transactions made at retail stores were excluded. The new definition eliminates this possibility and makes clear that only truly retail sales are exempt.

New materials—Amendment No. 1 to Maximum Price Regulation No. 188, issued October 6, requires that before a new article may be offered for sale, the manufacturer must submit the price in accordance with the regulation's provisions. If he has not heard to the contrary in 15 days, the price becomes official and the article may be offered for sale. The action was taken to prevent delays in procurement of many newly developed manufactured consumers' durable goods and building materials.

Scrap iron and steel—Amendment No. 8 to Revised Price Schedule No. 4 (iron and steel scrap), effective October 15, permits the inclusion of galvanized materials meeting size specifications in No. 2 heavy melting steel, as well as uncut bumpers, rear ends and front axles of automobiles. Galvanized material had been ruled an inferior grade and priced at a differential below the price of No. 2 heavy melting steel, and the uncut rear ends were considered unprepared everywhere except on the Pacific Coast. The price schedule's section governing brokerage commissions has been amended to incorporate established interpretations of that portion of the schedule which provides that no commission shall be payable to a person for scrap he prepares. The maximum price for No. 2 busheling has been increased $1.50 per gross ton and specifications have been liberalized by raising the maximum dimension from 8 in. to 12 in. A new grade of scrap (baled machine shop turnings) has been inserted in the schedule. Baled machine shop turnings are defined as ordinary machine shop turnings hydraulically compressed into bundles weighing not less than 75 lb. per cu. ft. A differential of $4 per gross ton between unbaled turnings and baled turnings has been created. The special preparation charge for crushing turnings has been changed to exclude any premium for crushing heavy turnings. Provisions of the schedule governing inferior unlisted grades have been amended to allow OPA to adjust the price of an unlisted inferior grade where the seller's base period experience has been inadequate or unrepresentative, also to provide for cases in which the seller of an unlisted grade did not sell such a grade during the base period of September 1, 1940 to January 31, 1941. A provision covering preparation-in-transit of allocated unprepared scrap to consumers lacking preparation facilities is provided. If unprepared scrap in rail carload lots is allocated to a consumer lacking preparation facilities, the consumer may designate a dealer or dealers to prepare the scrap on a preparation fee basis. The maximum preparation fee shall be the usual schedule differentials of $2.50 per gross ton for No. 1 heavy melting steel; $3.50 per gross ton for cut automotive steel, one foot or under; and $4.00 per gross ton for No. 1, No. 2 and No. 3 bundles. Amendment No. 8 raises the price of high manganese steel scrap having dimensions greater than 12-in. by 24-in. by 8-in. Where high manganese steel scrap meeting these size specifications, containing at least 10 per cent manganese and suitable without further preparation for direct charging into an electric furnace is sold for electric furnace use only, the schedule has provided that the basing point price at the applicable basing point shall be $7 per gross ton above that for No. 1 heavy melting steel. If the material is larger than 12-in. by 24-in. by 8-in. and is sold for electric furnace use only, the basing point price at the applicable basing point shall be $3 per gross ton above that for heavy melting steel scrap.

Storage batteries—Amendment No. 28 to Maximum Price Regulation No. 136 (machines and parts and machinery services), as amended, issued October 4, postpones the application of price ceilings to sales of electric storage batteries by manufacturers and wholesalers from October 1 to October 15.

GENERAL NEWS

N. H. Revamp Plan Modified by I.C.C.

Changes made after the court's disapproval of previous reorganization report

Making its third supplemental report in the New York, New Haven & Hartford reorganization proceeding, the Interstate Commerce Commission has approved further modifications in the plan for revamping that road and its affiliates, the Old Colony, the Hartford & Connecticut Western, and the Providence, Warren & Bristol. At the same time the commission made public its second supplemental report on the Boston & Providence, making further modifications in the plan for reorganization of that road.

Both reports came out of the further hearings held by the commission following the court's disapproval of the previous plans. The commission's previous report which modified an earlier one by Division 4 was reviewed in the *Railway Age* of March 1, 1941, page 383, while the court's disapproval was reported in the issue of December 20, 1941, page 1054.

The present report, among other things, leaves unchanged the total capitalization of $365,000,000 for the reorganized company, and affirms the previous finding that the equity of New Haven stockholders is of no value. It alters the arrangements for the acquisition of the Old Colony and for the use of South Station, Boston, Mass., property of the Boston Terminal Company. The "effective date" of the reorganization as of which the claims of the creditors shall be discharged is left up to the reorganization committee, provided that it shall not be earlier than January 1, 1943, nor later than January 1, 1944.

The acquisition of certain Old Colony properties is now approved on a basis which would give the O. C. $3,289,600 fixed interest bonds and $2,467,200 income bonds. In the Boston & Providence plan, acquisition of that road's properties, assets, and franchises is approved under an arrangement whereby the reorganized New Haven would issue to B. & P. trustees $3,039,213 fixed interest bonds, $1,467,520 income bonds, and $1,467,520 preferred stock; also, N. H. would assume and pay (subject to certain limitations) the liabilities and obligations of the B. & P. and its trustees.

With respect to Old Colony, the plan now contemplates that the charters and statutory obligations of O. C. and the reorganized New Haven will be amended or superseded so that neither road will be under any obligation to operate passenger service on O. C. lines. The reorganized New Haven would, however, undertake a contractural obligation to operate for its own account freight service on the so-called Boston group until such time as it shall acquire the assets and franchises of that group. It will undertake a like contract to operate passenger services on O. C. lines so long as the losses therefrom do not exceed certain so-called critical figures. In the latter connection the passenger services may be discontinued if during any consecutive 12 months within the period of two years following consummation of the reorganization plan the losses amount to $850,000. The so-called critical figure for any 24 consecutive months, all of which shall be after the end of the two year period, is set at $500,000.

Moreover, the contractual obligation to operate passenger service is to terminate if the legislature of Massachusetts has not prior to the end of two years after the consummation of the plan amended the charter of the reorganized New Haven so that it will be under no charter obligation to operate passenger service on the O. C. lines. The reorganized New Haven would not be obligated to acquire the assets and franchises of the Boston group, but it would have the right to do so at, or at any time after, the consummation of the plan.

Conflicting claims of the O. C. and the N. H. or their trustees as well as O. C.'s claim for disaffirmance of its lease would be released and cancelled. The plan further provides, however, that whenever any dividend is declared on the common stock of the reorganized N. H., funds in an amount equal to the aggregate of the dividend on the stock to which O. C. would have been entitled on account of the breach of its lease, shall be set aside as a sinking fund and used for the purchase or redemption and retirement of the reorganized N. H.'s income bonds; and in case all such income bonds shall have been retired, to the purchase or redemption and retirement of its preferred stock. Similar provisions are made with respect to the disaffirmed B. & P. lease.

The new preferred stock will, as a class, until the expiration of five years from consummation of the plan, be entitled to elect two-thirds of the board of directors. Thereafter the election of the board is to be by cumulative voting, with each holder of stock of either class entitled to as many votes per share as the number of directors to be elected; provided, however, that whenever the amount of accrued and unpaid dividends on the preferred stock shall equal at least 10 per cent, the preferred holders, as a class, shall be entitled to elect two-thirds of the board until the

(*Continued on page 631*)

Operating Revenues Nearly 10% Over '29

Ratio of travel increase is rising, Statistics Bureau shows in summary

Railroad operating revenues for the first eight months of this year have already exceeded those for the entire calendar year 1940, and are 9.9 per cent above the peak year 1929, the Interstate Commerce Commission's Bureau of Transport Economics and Statistics notes in the latest issue of its Monthly Comment on Tranportation Statistics. The increase as compared with 1929 is due to the 17.5 per cent rise in freight revenue which more than offset the 1.3 per cent drop in passenger revenues, and the lower mail revenues.

The Bureau calls attention to the fact that mail "is the only class of traffic which has failed to benefit from the war." It is up only 1.5 per cent above last year, and is 29.8 per cent below 1929. Express revenue to the railways, on the other hand, while 42.1 per cent below 1929, shows an increase of 46.2 per cent over the first eight months of last year.

Reviewing June's passenger traffic statistics, the Bureau notes that the upward trend has continued "at a more rapid rate." For that month coach passengers numbered 48.4 per cent more and parlor and sleeping car passengers 69.8 per cent more than June, 1941; whereas for this year's first five months the corresponding percentages were respectively 30.2 and 57.3. Reference is also made to the 10 per cent increase in fares which became effective February 10. In that connection it is pointed out that coach revenue per passenger-mile for the second quarter of 1942 was nevertheless up only 7.9 per cent, while parlor and sleeping-car revenue was up only 7.4 per cent above the same 1941 quarter. The average journey of coach passengers "has increased steadily from 72.8 miles in January to 85.2 miles in June," although no upward trend is noted in the length of journey of Pullman passengers. It was 383.8 miles in January as compared with 383.7 miles in June, and 400.2 miles in June, 1940.

The only comment on August's operating ratio of 58.4 is that it "continues to remain well below last year." As noted in the *Railway Age* of September 12, page 426, the July ration of 58.7 (now bettered by the above) was the lowest reported for any month in the monthly-basis records of the Bureau of Railway Economics, Association of American Railroads, which run back to 1911.

With respect to carloadings, the I. C. C. Bureau calculates that the September total

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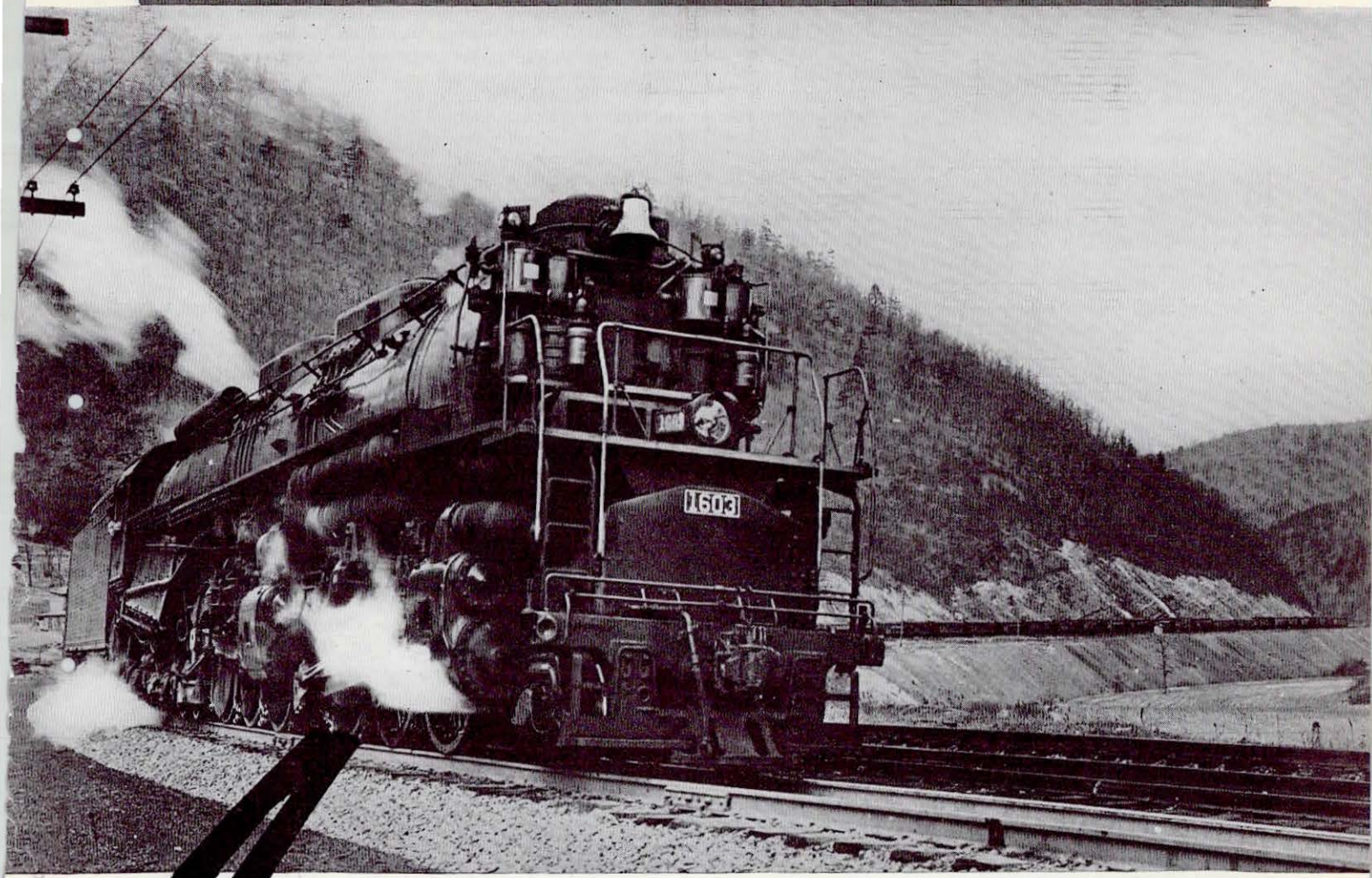
STEAM POWER IS STILL SUPREME



America must have coal!

Coal is one of America's vital strategic materials. With it blast furnaces and open hearths produce iron and steels; power plants provide steam and electric power to turn the wheels of industry . . . it is, literally the life-blood of all industry — and it *must* be kept moving.

Some of the world's finest coal comes from the great Appalachian region. To supply the coal-hungry industries of America from these mines high in the Allegheny Mountains, the most powerful locomotives available are required. The Chesapeake & Ohio Railroad, hauling thousands of tons of coal daily from the heart of this region, employs the famous Lima-built 2-6-6-6 "Allegheny" type locomotives, the most powerful four-cylinder, six-coupled articulated engines ever built.

Steam power is still supreme in the task of keeping the Nation supplied with coal.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

was eight per cent above the comparable 1941 figure when l. c. l. loadings are excluded; total September loadings, including l. c. l., were one per cent below those of September, 1941.

Comparing current net railway operating income figures with those of 1929, the bureau shows that the level of the latter year has not yet been reached. For the 12 months ended August 31, the total was $1,164,664,000 as compared with $1,336,801,000 for the 12 months ended August 31, 1929. For the first seven months of 1942 the ratio of income after fixed charges to fixed charges was 2.09 for all Class I roads, including roads undergoing reorganization. With respect to dividend disbursements, the Bureau says that notwithstanding the increase of 58.4 per cent in net income, the dividend appropriations for this year's first seven months were less than for the same 1941 period.

The statement includes tabulations of data on freight car installations and retirements, showing that the net addition to the supply during this year's first eight months was 47,535 cars or 2.8 per cent of the total owned or leased on January 1. "This," the Bureau says, "is in sharp contrast with the expansion in freight traffic." Also reviewed are the second-quarter commodity statistics. One table there shows that crude petroleum traffic originated during the April-June period this year was 323.7 per cent above that originated in the comparable 1941 quarter. Gravel and sand traffic was up 42.9 per cent; anthracite coal, 23 per cent; and iron ore, 10.8 per cent. "The large increase in tons of gravel and sand," the Bureau explains, "reflects the growth in wartime construction activity, while the tremendous increase in crude petroleum tonnage is indicative of the diversion from water to rail carriers."

Discussing railroad averages and the price level, the Bureau relates various railroad indices to the Department of Labor's September 19 index of wholesale prices of all commodities. That index was 99.3 per cent of the 1926 level. Meanwhile railroad revenue per ton-mile for the first six months of this year was 84.5 per cent of the comparable 1926 figure; the index of revenue per ton was 102.6; revenue per passenger-mile, 63.9; and revenue per passenger, 114.4. Comparing figures for July, 1926, with those of July, 1942, the Bureau calculated the following additional index figures: Compensation of employees (excluding general officers and staff assistants) per hour, 130.6; cost of yard and train coal per ton, 104.3; cost of yard and train fuel oil per bbl., 76.7. For the first seven months of this year the operating expenses per car-mile of all services were 77.6 per cent of the comparable 1926 figure, although in the latter the passenger-train car miles were 12.3 per cent of the total, whereas in 1942 they amounted to only 9.2 per cent.

Another table in the statement shows the percentage relation of clerical to train operating personnel, and it indicates a reduction in the relative burden of clerical work. In other words, the ratio of man-hours of clerical work paid for to man-hours of train operating personnel dropped from 58.1 in July, 1928, to 44.9 in July, 1942. On a total-compensation basis the ratio fell during the same period from 46 to 37. Stated otherwise, the clerk man-hours were decreasing 24.9 per cent while train and engine service man-hours were decreasing only 2.9 per cent. "This reduction in the relative burden of clerical work," the Bureau says, "may be in part attributed to the fact that labor-saving devices and simplified methods of accounting have more than kept pace with the demand for more information, but the decline in l. c. l. traffic which involves many waybills and other influences should also be considered."

New York Commutation Fares

The Interstate Commerce Commission has announced that hearings in the No. 28815 proceeding involving commutation fares in New York state will be resumed on October 26 at the St. George Hotel, Brooklyn, N. Y. Commissioner Alldredge will preside.

National of Mexico Takes Over El Oro Mining Railway

The National Railways of Mexico has taken over the El Oro Mining and Railway Co., Ltd., as compensation for money owed by the latter. The line runs from Tultenango to El Oro in the state of Mexico, a distance of 10 miles.

U. S. and Mexico Arranging for Railway Equipment

The United States and Mexico are arranging for the purchase of second hand equipment required by the National Railways of Mexico. The equipment includes 56 standard and 9 narrow gage locomotives, 500 tank cars, 100 box cars and a number of gondola and flat cars.

Another Public-Aids Brief

Another brief in connection with the public-aids-to-transportation investigation has been filed with the Board of Investigation and Research by the American Municipal Association. Thus the Board has received eight briefs, the other seven having been noted in last week's issue, page 577. There it was erroneously stated that the deadline for the filing of these briefs was September 5; the correct date was October 5.

I. C. C. Vacates Mileage Book Order of 1925

Acting in accordance with that provision of the Transportation Act of 1940 which amended section 22 of the Interstate Commerce Act to make provisions relating the sale of interchangeable mileage tickets permissive instead of mandatory, the Interstate Commerce Commission has vacated its April 13, 1925 order requiring railroads to issue such tickets. The old provision directed the I. C. C. to require the issuance of mileage scrip, whereas the 1940 amendment changed this to stipulate merely that nothing in the act should prevent the carriers from selling passenger transportation in that way.

The proceeding wherein the railroads had been subject to the now-vacated order was No. 14104. In its original decision, the commission in 1922 directed that the mileage books be issued at a discount of 20 per cent from the basic fares. The carriers appealed to the courts, and the discount phase of the commission's order was set aside. Whereupon the commission's second decision (the April 13, 1925 order) required the issuance at regular rates of $15, $30, and $90 mileage books.

Representation of Employees

National Mediation Board certifications of recent elections on the Akron, Canton & Youngstown reveal that the Brotherhood of Railroad Trainmen has been able to supplant the Order of Railway Conductors and the Switchmen's Union of North America to become the representative of both the road conductors and yard conductors and yard brakemen. Meanwhile the Brotherhood of Locomotive Engineers successfully met a challenge from the Brotherhood of Locomotive Firemen & Enginemen and retained the right to represent engineers on the Kansas City Terminal.

On the Missouri-Illinois, the Brotherhood of Railway Clerks has been certified as the representative of the clerical, office, station, and storehouse employees.

Illinois Central Gets Truck Routes

Rejecting protestant contentions to the effect that the railroads should be required to utilize existing highway services of independent motor carriers, the Interstate Commerce Commission has granted the Illinois Central and its affiliate, the Yazoo & Mississippi Valley, certificates covering common-carrier trucking operations over various routes between points in Alabama, Arkansas, Mississippi, and Tennessee. The railroads propose to operate with vehicles leased from the Railway Express Agency, and in that connection the decision pointed out that such vehicles must be operated "under the direction and control of applicants and under their responsibility to the general public as well as the shipper."

Rail and Barge Joint Rates

The Interstate Commerce Commission has assigned the No. 26712 proceeding involving rail and barge joint rates for further hearing before Commissioner Miller at the Morrison Hotel, Chicago, on November 30.

"The hearing," the announcement said, "will not be limited to cost of service matters. The parties will be expected to present evidence as to any changes in operations, traffic and rates. This evidence should bring the record up to date as completely as may be practicable."

Safety Support Rule Extended

The Mechanical Division, Association of American Railroads, has recently taken action to extend by one year the effective date of Interchance Rule 3, Sec. (b), Par. (8), which provides that effective January 1, 1943, cars will not be accepted from the owner unless equipped with bottom rod and brake-beam safety supports, A. A. R. recommended practice, or A. A. R. approved equivalent; and that, effective July 1, 1943, this provision will become a gen-

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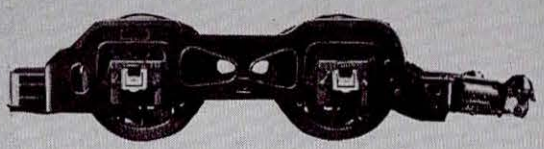
THE FRANKLIN SYSTEM OF STEAM DISTRIBUTION



*Trade Mark Registered U. S. Patent Office

THE LOCOMOTIVE BOOSTER

INCREASED CAPACITY FOR OVERWORKED LOCOMOTIVES

The unprecedented increase of traffic and the difficulty of obtaining new power have imposed a tremendous burden on our railroads. Therefore, it is imperative that they increase the capacity of existing power.

The means for doing this is at hand.

The Franklin System of Steam Distribution provides at least a third more train load-speed capacity.

The Booster* increases the drawbar pull for starting, accelerating and in any tight place.

With these capacity-increasing factors your locomotives will haul more tonnage at higher speeds.

FRANKLIN RAILWAY SUPPLY COMPANY, INC. NEW YORK CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

eral interchange requirement. The Board of Directors of the association has given consideration to this rule and decided to extend the effective date for one year to January 1, 1944, with the understanding that car owners will co-operate to the end that all of their interchange freight cars will be fully equipped by that date.

Freight Car Loading

Loadings of revenue freight for the week ended October 10 totaled 909,957 cars, the Association of American Railroads announced on October 15. This was an increase of 2,350 cars or 0.3 per cent, above the preceding week, an increase of 6,080 cars, or 0.7 per cent, above the corresponding week last year, and an increase of 98,051 cars, or 12.1 per cent, above the comparable 1940 week.

As reported in last week's issue, loadings of revenue freight for the week ended October 3 totaled 907,607 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For Week Ended Saturday, October 3			
District	1942	1941	1939
Eastern	165,962	183,801	161,900
Allegheny	189,648	199,625	167,511
Pocahontas	55,755	59,649	48,195
Southern	125,626	128,524	111,652
Northwestern ..	149,881	147,033	137,995
Central Western	142,446	134,275	120,682
Southwestern ..	78,289	64,989	58,069
Total Western Districts	370,616	346,297	316,746
Total All Roads	907,607	917,896	806,004
Commodities			
Grain and grain products	50,557	40,340	39,388
Live stock	21,453	18,874	19,606
Coal	169,075	170,414	127,693
Coke	14,272	13,549	11,721
Forest products.	49,537	46,440	40,728
Ore	78,857	70,114	66,074
Merchandise l.c.l.	91,842	161,316	159,626
Miscellaneous ..	432,014	396,849	341,168
October 3	907,607	917,896	806,004
September 26 ..	897,714	919,794	822,434
September 19 ..	903,099	907,969	813,329
September 12 ..	814,885	914,656	804,265
September 5 ...	887,960	797,791	695,094
Cumulative Total, 40 Weeks ...	33,143,786	32,185,645	27,396,044

In Canada.—Carloadings for the week ended October 3 totaled 69,987 compared with 67,833 for the previous week and 68,033 for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Oct. 3, 1942	69,987	36,829
Sept. 26, 1942	67,833	37,298
Sept. 19, 1942	69,781	37,663
Oct. 4, 1941	68,033	32,191
Cumulative Totals for Canada:		
Oct. 3, 1942	2,560,177	1,347,699
Oct. 4, 1941	2,400,113	1,176,190
Oct. 5, 1940	2,108,848	975,999

Sixty Years With Baldwin

The Baldwin Locomotive Works and subsidiary companies had 100 guests, principally railroad and railway supply men, at a dinner at the Chicago Club in Chicago on the evening of October 12 to do honor to Charles Riddell, district manager at Chicago of these companies, in celebration of his completion of 60 years in their service.

Charles E. Brinley, president of Baldwin, presided, numerous officers of the Baldwin companies were present, and short addresses reviewing Mr. Riddell's career were made by Mr. Brinley; H. A. Scandrett, trustee of the Milwaukee; and Norman C. Naylor, vice-president of the American Locomotive Company. Mr. Brinley presented Mr. Riddell with a tribute to him adopted by the company's board of directors, and also with presents from the board.

Mr. Riddell entered the service of the Standard Steel Works, a subsidiary of Baldwin, as an office boy in Philadelphia on October 12, 1882, when 15 years old. From 1896 to 1904 he was Chicago manager of the Standard Steel Works, and since 1904 has been district manager of Baldwin and all subsidiaries. He is still in vigorous health, and Mr. Brinley announced that he will continue as district manager.

I. C. Worker Has Idea for Cutting Delay

The first award of individual production merit issued by the Illinois Central Employees' War Production Drive General Suggestion Committee on the Chicago Terminal division of the railroad was presented to Robert C. Goodwin, load supervisor at the Randolph Street suburban station on October 9. The suggestion will eliminate or greatly reduce delay in train movements that might be occasioned by the failure of electric power in feeder lines as previously arranged.

Inspection of New Cast Iron Wheels

In a circular letter, recently issued by the A. A. R. Mechanical Division, attention is called to A. A. R. Specification M-403-41 which covers cast-iron wheels for locomotives, tenders and cars, and provides that "In all cases where wheels are rejected for any reason, the letter 'R' must be chipped out of the 'A. A. R.'" With the modification in wheel markings recently placed in effect, which eliminates the purchaser's name, the above requirements assume increasing importance. The circular letter emphasizes the necessity of insisting that the letter "R" be chipped from rejected wheels in the presence of inspectors at the time of rejection, with the understanding that any violation of the requirement must be reported to the office of the secretary of the Mechanical Division. The purchaser's inspectors are held responsible for policing this provision.

Mexico Negotiating Purchase of Three Foreign Owned Lines

President Manuel Avilla Camacho of Mexico has announced that negotiations are practically complete for the purchase by the Mexican government of three foreign-owned railroads with government bonds. The transaction, which had its origin during the administration of President Lazaro Cardenas, has been pending for four years. The properties include the British-owned Mexican Railway which runs from Mexico City, D. F., and Vera Cruz, Ver. C., and which has 264 miles of main line and 172 miles of branch lines; the U. S.-owned Southern Pacific of Mexico, which runs between Nogales, Ariz., and Guadalajara, Jal., and which has 1,095 miles of main lines and 368 miles of branch lines; and the Canadian-owned Mexican North Western which runs between Juarez, Mex., and Chihuahua, a distance of 472 miles.

Club Meeting

The West Virginia Section, A. S. M. E., will be addressed by James Partington, manager, engineering department of the American Locomotive Company, on the subject of "Steam, Electric and Diesel Locomotives and Their Welding Problems" at a meeting to be held at Charleston, W. Va., on October 27. Following Mr. Partington's address the moving picture film, "Railroadin'," a 30-minute story of America's railroads, will be shown. This picture was produced jointly by the American Locomotive and General Electric companies.

New S. A. L. Raleigh Station Is Dedicated

The Seaboard's new passenger station at Raleigh, N. C., named "Eugene Bagwell Station" in honor of the road's former chief operating officer who died in 1936, was dedicated on October 8. The station is of authentic colonial design and is modern in every detail. It was opened for operation on September 29.

Numerous state, city, religious and edu-

The Seaboard's New "Eugene Bagwell" Passenger Station at Raleigh, N. C.

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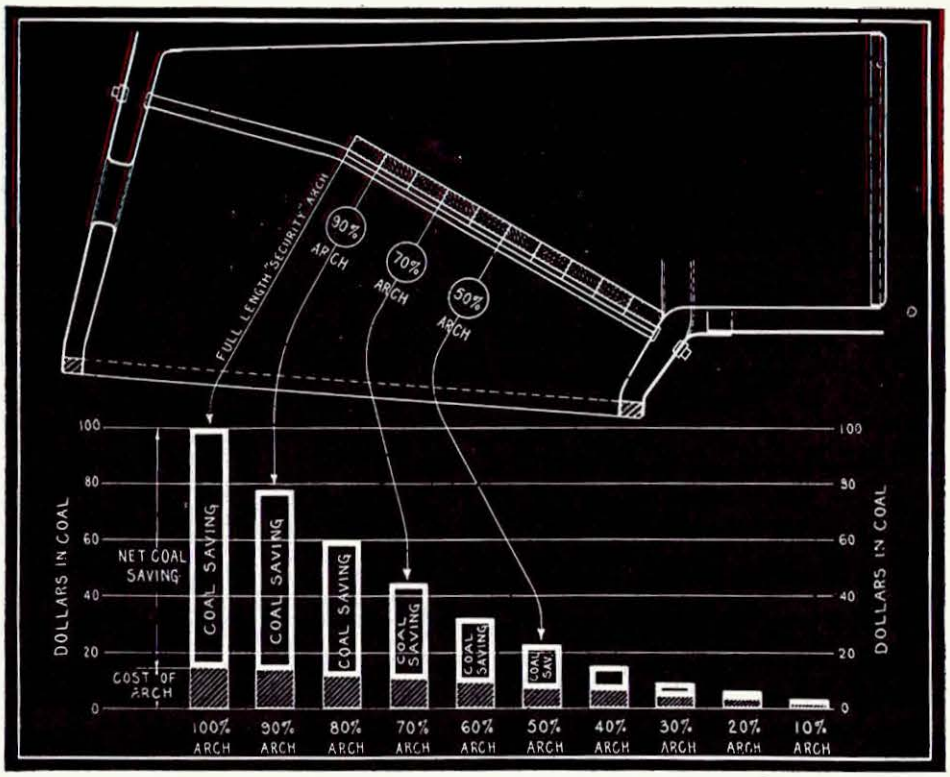


THE EFFECT OF ABBREVIATED ARCHES ON FUEL SAVING

FUEL CONSERVATION... a wartime need!

Fuel wastage is a two-fold loss; the fuel itself and the transportation necessary to haul it. Because of the strategic importance of fuel to the war program every effort must be made to conserve this vital material.

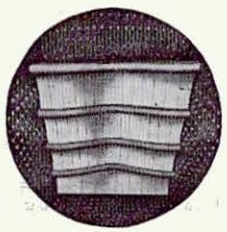
The fuel economy of Security Sectional Arches has been thoroughly proved in over 32 years of service on American railroads. But only a *complete* Arch can produce maximum fuel savings.

You need a full Arch for full fuel economy.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

cational officials participated in the ceremonies. The keys of the station were presented to Raleigh's Mayor Andrews by L. R. Powell, Jr., chief executive officer of the Seaboard. Governor Melville Broughton of North Carolina and Congressman Harold D. Cooley, among the principal speakers paid tribute to the railroads for their part in the war effort, the Governor pointing out that "the opening of this station is appropriately timed to meet the challenge to the nation's safety."

Among the other speakers were Josephus Daniels, former Secretary of the Navy, and Ambassador to Mexico, J. W. Harrelson, dean of administration of North Carolina State College, John Park, publisher of the Raleigh Times, Earl Johnson, president of the Raleigh Chamber of Commerce, Stanley Winbourne, chairman of the State Utilities Commission, and W. D. Faucette, chief engineer of the Seaboard. C. E. Bell, passenger traffic manager of the road, presided.

Eugene Bagwell's widow unveiled a plaque inscribed: "This station is named for him in recognition of his outstanding leadership and service to the railway, to his city and to his state." Mr. Bagwell, who was born in Raleigh in 1884, entered the service of the Seaboard in 1904. He became chief operating officer in 1934.

Retirement Act Amendments

Proposed amendments to the Railroad Retirement Act have been introduced in Congress by Senator Reynolds, Democrat of North Carolina, and Representative Shafer, Republican of Michigan. The Reynolds bill (S. 2846) would provide for an annuity for disability after 10 years' service; while the Shafer bill (H.R. 7703) would authorize the Railroad Retirement Board to award disability annuities to totally and permanently disabled individuals "who have completed a period of service within a reasonable time of 30 years' service."

Truck Hits "City of San Francisco"

The driver of a truck was injured and two passengers of the eastbound "City of San Francisco" of the Chicago & North Western—Union Pacific—Southern Pacific were cut by flying glass when a truck loaded with sheet steel ran into the side of the train 11 miles east of Clinton, Ia., on the North Western on October 13. The three power units had passed over the grade crossing and the truck ran into the side of the following car, a baggage car, which was derailed but remained upright. The truck and sheet steel scratched, dented and cut the sheathing of all passenger-carrying cars except the last three and broke journal boxes and other parts. Several wheels of the train were flattened.

September Employment Figures Show Slight Decrease

In the one-month period from mid-August to mid-September the number of railroad employees dropped from 1,322,435 to 1,321,546, or 0.06 per cent, according to the summary of preliminary reports compiled by the Interstate Commerce Commission. The decrease is due entirely to a drop of 2.84 per cent in the number of employees in maintenance of way and structures, as all other groups showed slight increases over the mid-August figures. The largest increase during the period, on a percentage basis, was in train and engine service, where a gain of 1.6 per cent was reported. As compared with the report for September, 1941, substantial increases were shown in all groups, ranging from 6.46 per cent for maintenance of way and structures to 12.45 per cent for the transportation subgroup including yardmasters, switch tenders and hostlers.

Adjusted for seasonal variation, the relative figures for employment, based on the 1935-1939 average as 100, continue to show an increase. The index number for September of this year is 127, as compared with 116.4 for September, 1941, and 102.6 for the same month in 1940. For August, 1942, the index number was 126.4, as compared with 125.7 for July.

Senate Passes Tax Bill

Conferees were at work this week reconciling the differing House and Senate versions of H.R. 7378, the new tax bill which was passed by the Senate on October 10. In passing the bill the Senate did not change its committee on finance's versions of those provisions of particular interest to railroads, which were noted in last week's issue page 583.

Such provisions include the increase from five to 10 per cent in the tax on amounts paid for passenger transportation, and those relating to the acquisition by railroads of their own securities and the tax base of a reorganized company.

While the bill was under consideration in the Senate, Senator Wheeler, Democrat of Montana, proposed but then withdrew an amendment which he said would prevent speculation in securities of utility companies undergoing reorganization. It was at the request of Chairman George of the committee on finance that Senator Wheeler agreed not to press his proposal, but he served notice that he would bring it up later with retroactive provisions.

As Mr. Wheeler explained it, the amendment would provide that any person who purchases any security of a public utility corporation undergoing reorganization would be subject to a tax equalling 90 per cent of the profit resulting from such transaction. For the purpose of arriving at the profit, securities accepted in a reorganization proceeding would be accepted at their face value where they have a face value, while no-par stock would be assessed at $100 a share. No loss would be allowed on a subsequent sale, unless such sale was below original cost.

It was because "speculators have been purchasing at low prices securities of railroads undergoing reorganization" that Senator Wheeler was prompted to propose his amendment. Such speculators, he said, hope to make large profits; and unless reorganization plans give recognition to such securities "at inflated values" there will be opposition and litigation. The Montanan also put into the Congressional Record a letter he had received from Interstate Commerce Commissioner Walter M. W. Splawn, chairman of the commission's legislative committee.

Mr. Splawn stated that the supply of securities of railroads undergoing reorganization together with the "abnormal rise" in rail earnings makes the field "an attractive one for speculation." The commission, Mr. Splawn went on, has given consideration "to a possible recommendation that transfers of securities during the pendancy of reorganization proceedings be limited or be prohibited entirely." He added, however, that "we have hesitated to do this because not only of administrative difficulties but because of the situation of possible necessitous sellers."

Still, Mr. Splawn continued: "If the present speculative orgy can be curbed in no other way, such a limitation or prohibition may become desirable. It may be that a drastic limitation on speculative activity in these securities could be accomplished by some other appropriate means. Such a limitation, in our judgment, would promote the public interest."

August Accident Statistics

The Bureau of Transport Economics and Statistics of the Interstate Commerce Commission on October 7 issued its preliminary summary of steam railway accidents for August and for the first eight months of this year. The tabulation, which is subject to revision, follows:

Item	Month of August		8 mos. ended with August	
	1942	1941	1942	1941
Number of train accidents*	1,128	858	8,411	5,811
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	242	267	1,393	1,458
Injured	202	194	1,109	1,257
Passengers on trains:				
(a) In train accidents*				
Killed	..	..	20	4
Injured	71	83	745	734
(b) In train-service accidents				
Killed	10	3	30	8
Injured	206	177	1,367	1,152
Travelers not on trains:				
Killed	..	1	12	5
Injured	82	65	522	570
Employees on duty:				
Killed	97	75	609	446
Injured	3,289	2,507	21,345	15,627
All other nontrespassers:**				
Killed	180	152	1,408	1,282
Injured	513	501	4,316	4,094
Total—All classes of persons:				
Killed	529	498	3,472	3,203
Injured	4,363	3,527	29,404	23,434

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:				
Killed	163	135	1,272	1,154
Injured	333	340	2,962	2,837

Canada Has a New Transport Minister

Joseph E. Michaud, for ten years a member of the House of Commons at Ottawa and for seven years Fisheries Minister, has been named new Minister of Transport in the Dominion Cabinet. This transfer was part of a Cabinet shuffle by Premier Mackenzie King. P. J. A. Cardin, leader

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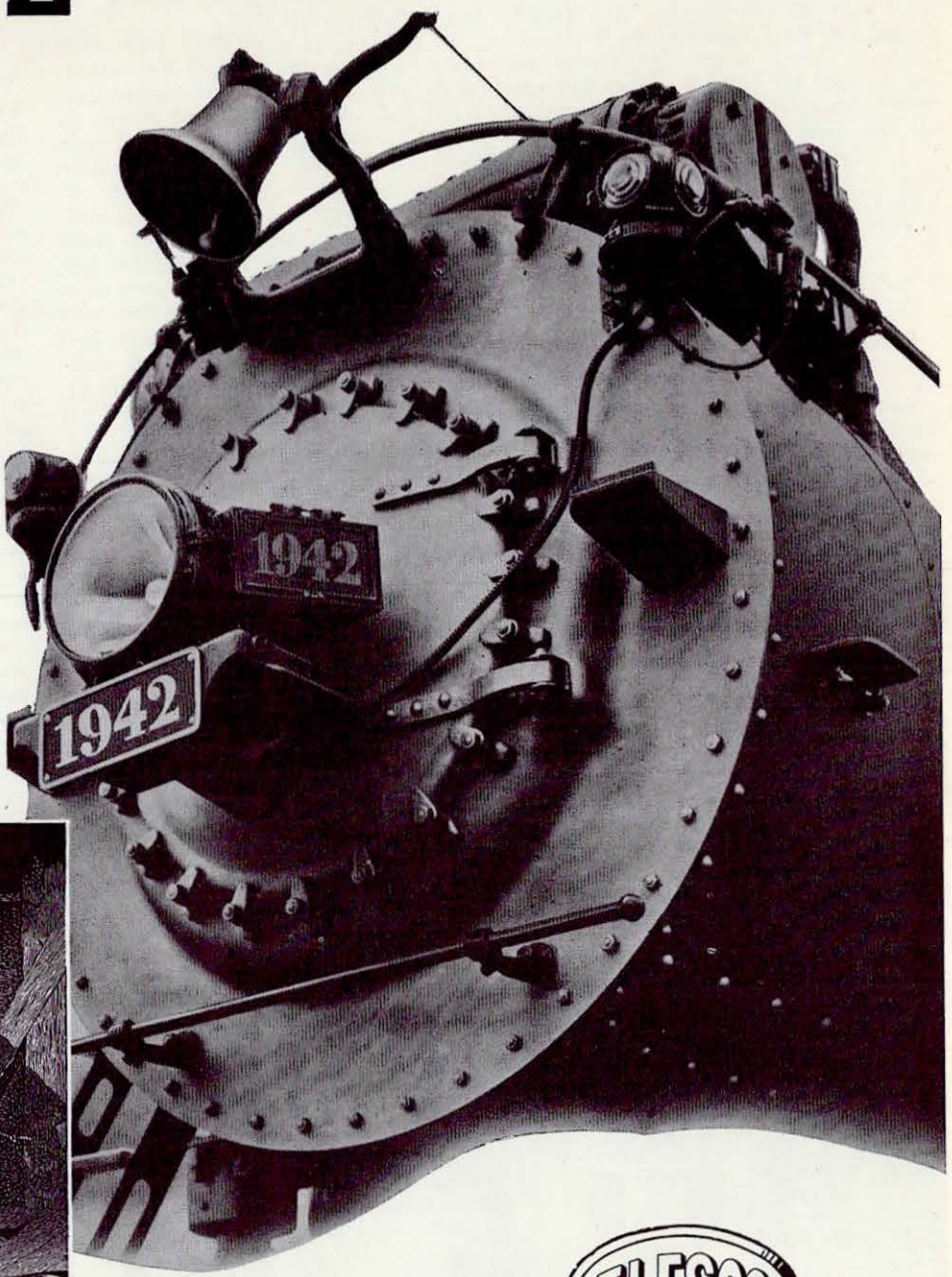
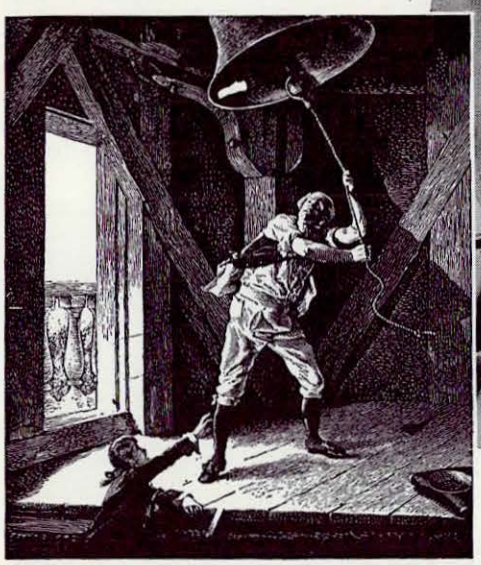
LIBERTY BELLS of 1942

The bells of America's locomotives — locomotives moving a million tons of freight a mile for every minute of the day and night . . . are LIBERTY BELLS OF 1942.

Elesco fuel saving and capacity increasing equipment are responsible for a large percentage of the power developed by these locomotives—be sure they are well maintained so that there will be no reduction in power.





Illustration, courtesy of Association of American Railroads.

ELESCO

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE SUPERHEATER COMPANY

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
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THE SUPERHEATER COMPANY, LTD.

of the anti-conscription bloc in the House, had been Minister of Transport, but he resigned during the last session when Premier King insisted on passage of his bill to remove the last remaining legal obstacle to adopting conscription of Canadian citizens for overseas service.

The portfolio of Transport had formerly been held by Clarence D. Howe, now doing a tremendous job as Munitions Minister—which corresponds to Donald Nelson's work in Washington. Mr. Howe, though, still holds a part of the Transport functions, namely, control of Trans-Canada Airlines, the publicly owned and controlled commercial air service. The transfer was made while Mr. Howe and Col. J. L. Ralston, Chief Defense Minister, were in London. Mr. Michaud, native of New Brunswick, will be the Minister responsible for the policies of the Canadian National Railways. He is 54 years of age, and prominent in the legal profession in his province.

Predictions Agree Traffic Will Tax Rail Capacity Soon

Manpower, working with greater co-ordination and co-operation than ever, is the chief resource available to the railroads to take care of the traffic increases expected in 1943, said Roy B. White, president of the Baltimore & Ohio, in an address before the meeting in Baltimore, Md., on October 9 of the Atlantic States Shippers Advisory Board. In spite of the fact that unofficial estimates indicate that next year the railroads will have to handle 15 per cent more business than they have had in 1942, they cannot count on getting much new equipment to meet the added demand on their capacity, he said, and their only alternative is to take up their belts another notch.

Still more help from shippers and receivers of freight in keeping cars moving and in getting full loads in every car will be needed "in underwriting this war of mobility with efficient transportation," Mr. White declared.

L. M. Betts, manager of the Railroad Relations Section of the Car Service Division of the Association of American Railroads, called attention to some of the transportation requirements the current war has created, and compared the volume of traffic the railroads are now handling successfully with the smaller volume that caused so many headaches in World War I. There is a danger in the fine record the carriers and shippers have made so far, however, he pointed out.

In each of the past three years some alarm has been voiced as to the capacity of the railroads to meet the autumn peak traffic load, though the record proved the alarms poorly founded. This year, when the railroads really have reached a point where they soon may be faced with the prospect of failing to meet the demands made upon them, because their equipment is wearing out at an unprecedented rate, no doubts of railroad capacity seem to be disturbing the complacency of the same people who feared a breakdown in the past. Additional cars, locomotives, and maintenance materials must be provided, he declared, to meet the heavier traffic 1943 will produce.

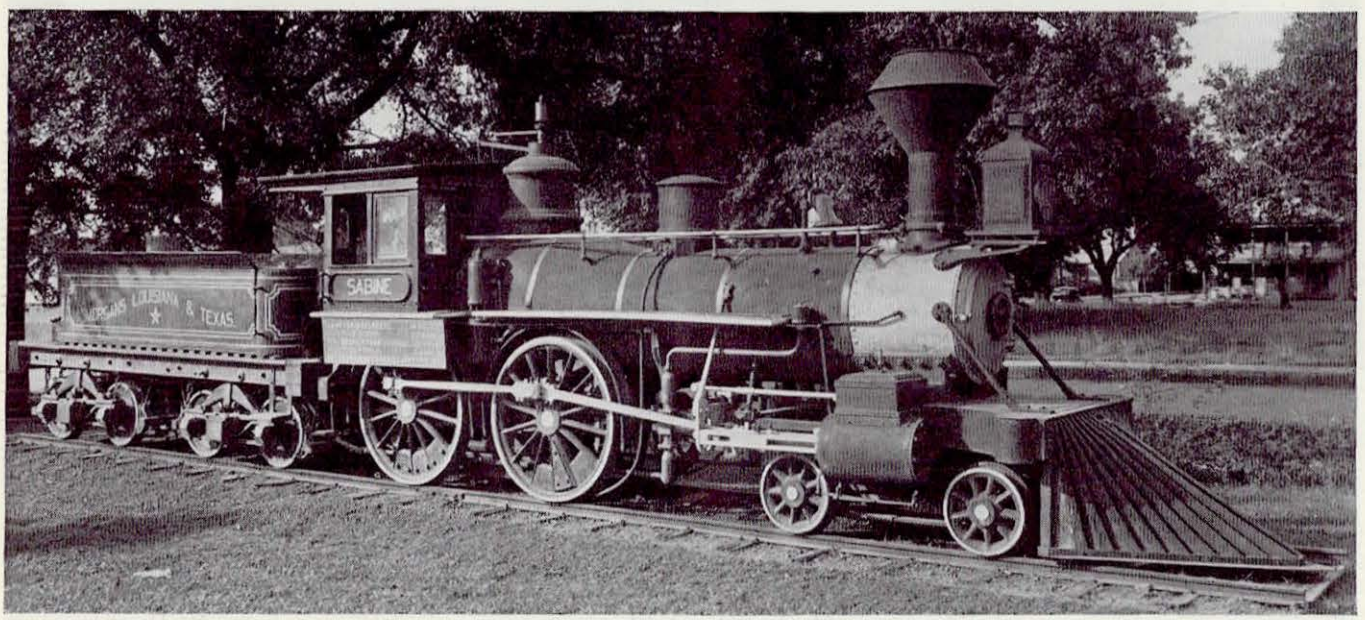
Carloadings in the Atlantic States territory for the last quarter of the year are expected to increase 8.4 per cent over the actual loadings in the same 1941 period, according to reports of the commodity committees presented at the meeting. The greatest increases are expected in gravel, sand and stone and coal and coke. A decrease of 12.6 per cent in l.c.l. loadings was predicted. The Emergency Port Transportation Committee reported a "liquid condition" at all ports within the territory, and a large excess capacity still available at New York harbor.

In presenting the report of the Railroad Contact Committee, R. W. Brown, president of the Lehigh Valley, called attention to a tendency toward what he regarded as the unnecessary and promiscuous use of "Do Not Hump" cards by shippers, and pointed out how this practice was retarding the efforts of the shippers boards and the railroads to keep cars moving. In addition to its regular business activities, the Atlantic States board formally adopted an amendment to its territory limitations to include most of the state of Virginia, taking in all points on and north of the Norfolk & Western main line from the West Virginia border to Roanoke, then on and north of the Virginian line from Roanoke to and including Norfolk.

Old Sabine Goes For Scrap

The Sabine, the Southern Pacific's most ancient locomotive, made its last run on October 5, when, during farewell ceremonies staged by citizens of Lafayette, La., where it had been on display since 1923, it was started on its way to the war front in the Southern Pacific's scrap and salvage campaign. The railroad decided to demolish its oldest locomotive and one that has played an important part in the early days of the Southern Pacific and the history of the South, to help the current nation-wide drive for metals. The metals recovered from the Sabine will be added to Louisiana's contribution to the scrap campaign.

The locomotive was built by the Niles Locomotive Works in 1854 on order of the New Orleans, Opelousas & Great Western, a rail line projected in 1852 by a group of Louisiana business men to connect New Orleans with other communities in south-central and south Louisiana. It was placed in service in 1855 while the line was being built from New Orleans to Morgan City, known in those days as Brashear City, located on the east banks of the Atchafalya river. The "Sabine" pulled trains that brought rails and other materials and supplies to build the line and, after the New Orleans, Opelousas & Great Western was sold to the late Charles Morgan in 1869, and extended on westward from Morgan City to a connection with the Texas & New Orleans at the Sabine river, it continued in freight



Chandler Studio

The Sabine Was Built in 1854

and passenger service. To the "Sabine" goes credit for pulling the first train to make connection with the Texas line at the Sabine river in 1880, thus forming the first Eastern link in what is now the Southern Pacific system extending from New Orleans to San Francisco. Both the Morgan's Louisiana & Texas, as the New Orleans, Opelousas & Great Western was known after being taken over by Charles Morgan, and the Texas & New Orleans are integral parts of the Southern Pacific.

The "Sabine" continued in service for 42 years and then was sold to a company operating a large number of sugar cane plantations in south Louisiana. For its new owners it hauled trainloads of raw sugar cane to the plants until in 1923 the Southern Pacific re-purchased the little engine and placed it on display at the Lafayette passenger station, where it has been viewed by thousands of tourists and other travelers.

N. H. Revamp Plan Modified by I. C. C.

(*Continued from page 626*)

back dividends have been paid, and provided further that preferred holders shall be entitled to elect two members of the board when unpaid dividends equal six quarterly dividends.

Provisions with respect to the use of Boston Terminal Company facilities are alike in both the N. H. and the B. & P. reports. They stipulate that charters of the O. C., the B. & P. and the reorganized N. H. shall be amended and franchises and statutory obligations superseded to relieve all three companies of any obligation to continue to use Boston Terminal facilities or to make payments for such use if and when such use shall be discontinued. Also, it is stipulated that all obligations of the three to make interest and principal payments on Boston Terminal Company debts (after the trustees have made their last payments) will so long as they continue to use the facilities be satisfied by payment by the New Haven of an annual amount obtained by applying to $275,000 the percentage of the total use of such property from time to time by the N. H.; and that the obligation to pay expenses of the Terminal shall be limited to the amount of such expenses after deducting all revenues from rentals and concessions. Meanwhile the plan does provide that if the number of passengers using South Station shall substantially increase, the commission will consider an application by any bondholders of the Terminal Company to make an equitable revision of the amount payable by the New Haven.

Other provisions of the modified plan give holders of New England Railroad Company bonds 100 per cent of principal and accrued interest in fixed interest bonds of the reorganized N. H., instead of 85 per cent in fixed interest bonds and 15 per cent in income bonds previously allotted. In accordance with the court's suggestion, the Rhode Island Hospital National Bank will receive $50,800 fixed interest bonds and $203,200 income bonds for the old N. H. first and refunding bonds pledged under a note, in lieu of $50,800 fixed interest bonds, $101,600 income bonds, and $101,600 preferred stock previously allotted. This bank's right to a setoff in the amount of $79,275 is also approved.

Commissioner Miller, dissenting in part, agreed with the New Haven position to the effect that the old stockholders should receive warrants to subscribe to the new common stock. Commissioner Eastman, on leave while serving as director of the Office of Defense Transportation, and Commissioner Splawn did not participate in the disposition of either the New Haven or the B. & P. proceedings.

Report Analyzes "Failure" of Hoch-Smith Resolution

In a publication in the Agricultural History Series of the U. S. Department of Agriculture recently issued, the results of research of E. O. Malott of the Bureau of Agricultural Economics into the net effectiveness of legislation designed to influence the rate making policies of a regulatory commission are presented and interpreted in considerable detail. The legislation covered by the report is the Hoch-Smith resolution, which was generally interpreted as a "mandate" to the Interstate Commerce Commission to give special consideration to agricultural commodities in rate cases. Passed by Congress in 1925 after long debate, the resolution remains in the statutes unaltered, but has had little direct influence the report indicates, since 1930, when the United States Supreme Court decided that the resolution did not change provisions of then-existing laws relating to transportation rates.

While the Hoch-Smith resolution did not accomplish its apparent purpose of obtaining noticeably lower freight rates for agricultural products than would have resulted from other legislation in effect, or from competitive conditions, the report points out, certain "achievements" are attributed to it. "One accomplishment of the Hoch-Smith resolution," Dr. Malott writes, "was a further step toward improvement in rate structures which had been disorganized by the large horizontal rate changes. . . . In some agricultural rates increases were prevented, and in others decreases were obtained. Whether the benefits derived by agriculture from these actions compensated for the expense of passing, administering, and prosecuting the cases, it is difficult to determine." Products of "depressed" industries other than agriculture "perhaps received greater aid," the report continues, while certain rates on agricultural products were lowered as the result of truck and waterway competition even though the resolution was, in practical effect, nullified by legal restraints placed upon it.

In analyzing the reasons for the failure of this legislation to accomplish its supposed objectives the report points out that "in the first place, the joint resolution seemed primarily a mandate requiring action and containing no new rate-making principles. It contained no new authority, . . . but was intended to encourage the commission to undertake a broad, expensive, rate-structure investigation." The report also remarks on the commission's "seeming unwillingness" to undertake the investigation, and points out how the delay resulting from the exhaustive character of the investigation "offset the advantages of any improvement in the rate structure because of the changes which took place between the start of an investigation and the filing of a decision."

Other reasons contributing to the failure of the Hoch-Smith resolution, in Dr. Malott's opinion, were the depression that affected nearly all industries after 1929, and so made them all subject to the resolution's provisions; the conflict between the purposes of the resolution and the requirements of Section 15a of the Transportation Act of 1920; and the "lack of traffic diversity on many railroads that are important in the movement of agricultural products."

Concluding this study, Dr. Malott suggests certain "lessons for the future" that may be derived from the fate of the Hoch-Smith resolution. These are: (1) A Congressional "mandate" may be too rigid to be applied practically; (2) such mandates, even if practical and desirable, must be consistent with fair practice and with each other; (3) the effect of general economic conditions on trade and industry influences rates more than legislation; and (4) greater disturbance to traffic movement results from wholesale readjustments than from the normal modifications always going on.

Jeffers Appeals for "Stay Away from Tracks" Campaign

An appeal to enlist all school children in a "Stay Away from the Tracks" campaign was made by W. M. Jeffers, president of the Union Pacific, in a letter dispatched on October 9 to all superintendents of schools in states traversed by the railroad. Mr. Jeffers called attention to childish pranks which have resulted not only in death and serious injury but extensive damage to railroad equipment and asked school officers to enroll every child under an oath of honor.

Mr. Jeffers' letter is as follows:

"The other day an eight-year-old boy placed an angle bar on a railroad track in Colorado 'just to see what the heck' would happen when a train struck it.

"What did happen? The first five cars of a high speed streamlined train were badly damaged by fire, the angle bar tearing a gash in the fuel tank, splashing oil which ignited the cars. The costly Diesel motors and other parts within the power cars were seriously impaired. Luckily, there were no injuries to the train crew or passengers.

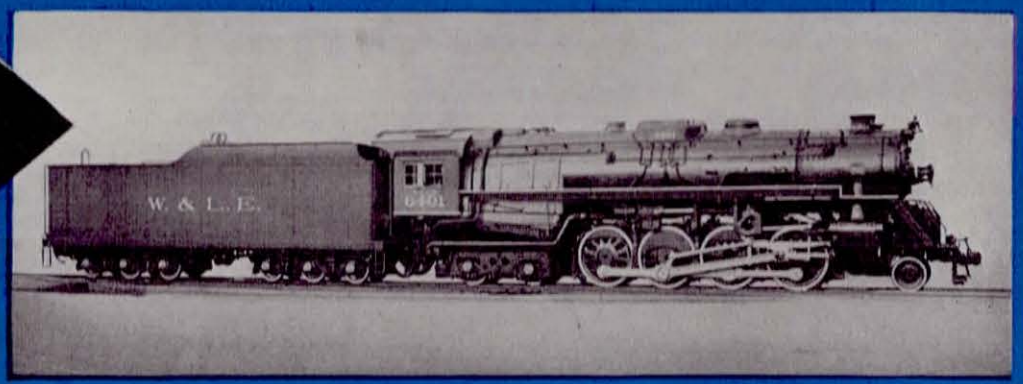
"About two weeks ago a nine-year-old boy admitted he was responsible for the wrecking of a train in Iowa in which the engineer was killed and the fireman injured. In this case the boy put a piece of railroad tie on the track 'to see what it would do,' and then went to school, forgetting all about what he had done until he learned hours later of the tragedy.

"It is tragic, yes, most unpatriotic, at a time when the nation's railroads, and the thousands of men and women employed by them, are bending every effort to help win this war, that they and the entire country's

News Department continued on second left-hand page

TEN MORE

10 BUILT IN 1937



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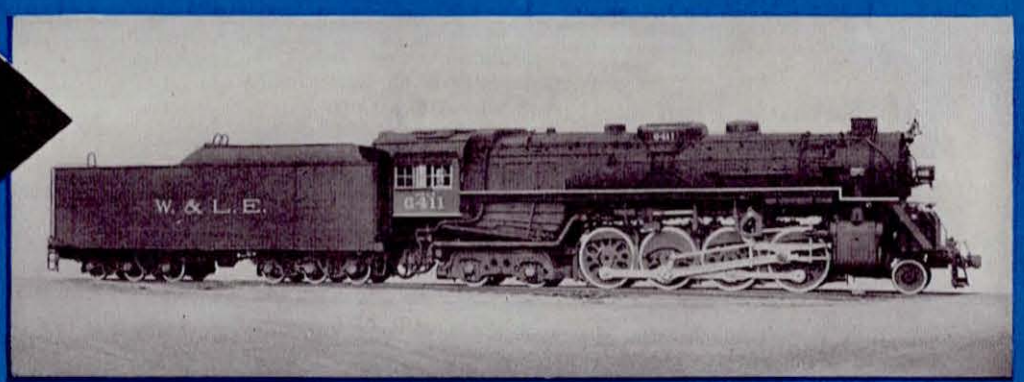

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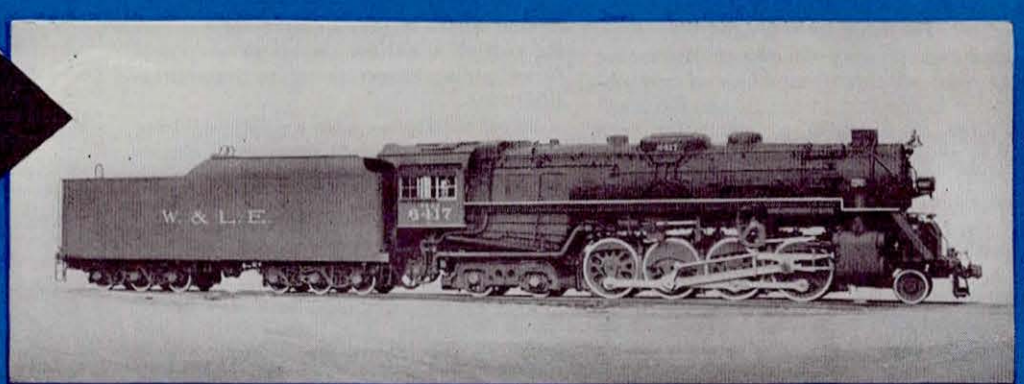

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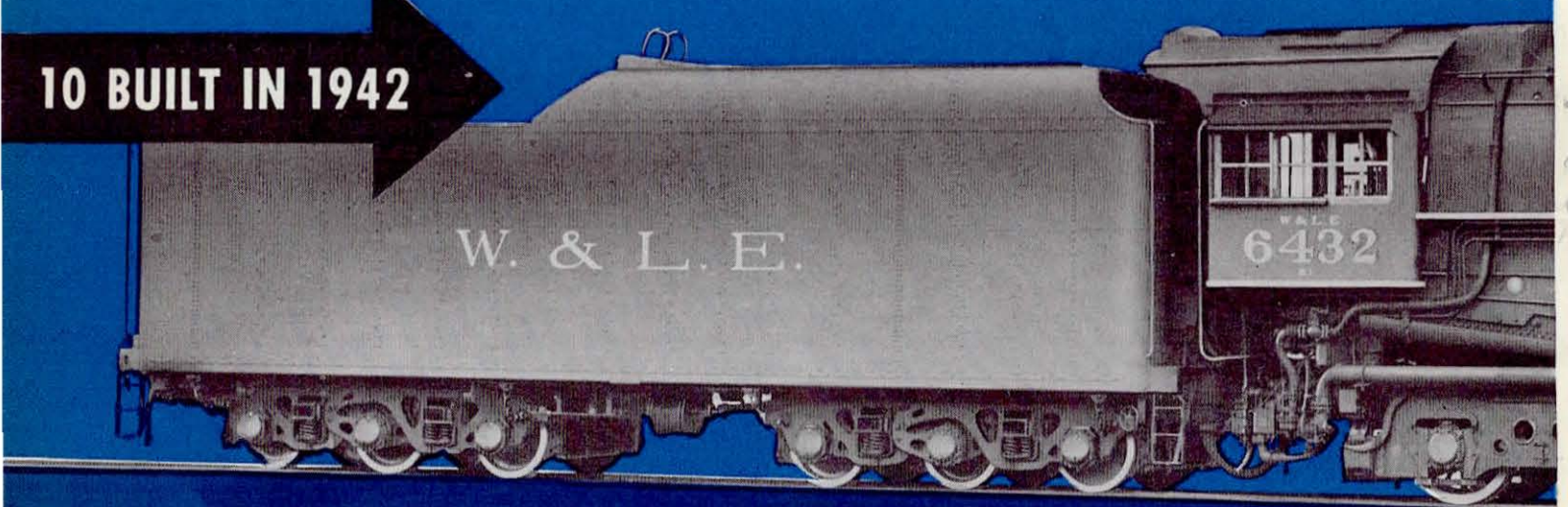


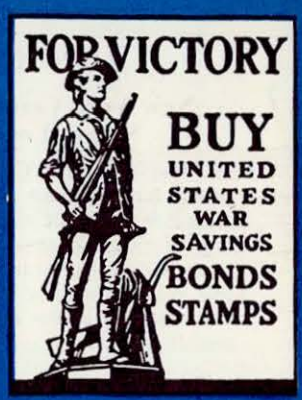
DELIVERED

Another 100% War Job

Drawing iron ore south from Lake Erie and steel and coal north from the Pittsburgh district is one of the Nation's most important war-time hauling tasks. American Locomotive Company delivered ten locomotives to the Wheeling and Lake Erie Railway in 1937 for this service, five in 1938, seven in 1941.

This year, while also breaking production records and keeping ahead of commitments on tanks, gun carriages and other important ordnance, American Locomotive Company delivered ten more of these locomotives. How? The designs were already made, so were the tools and jigs.

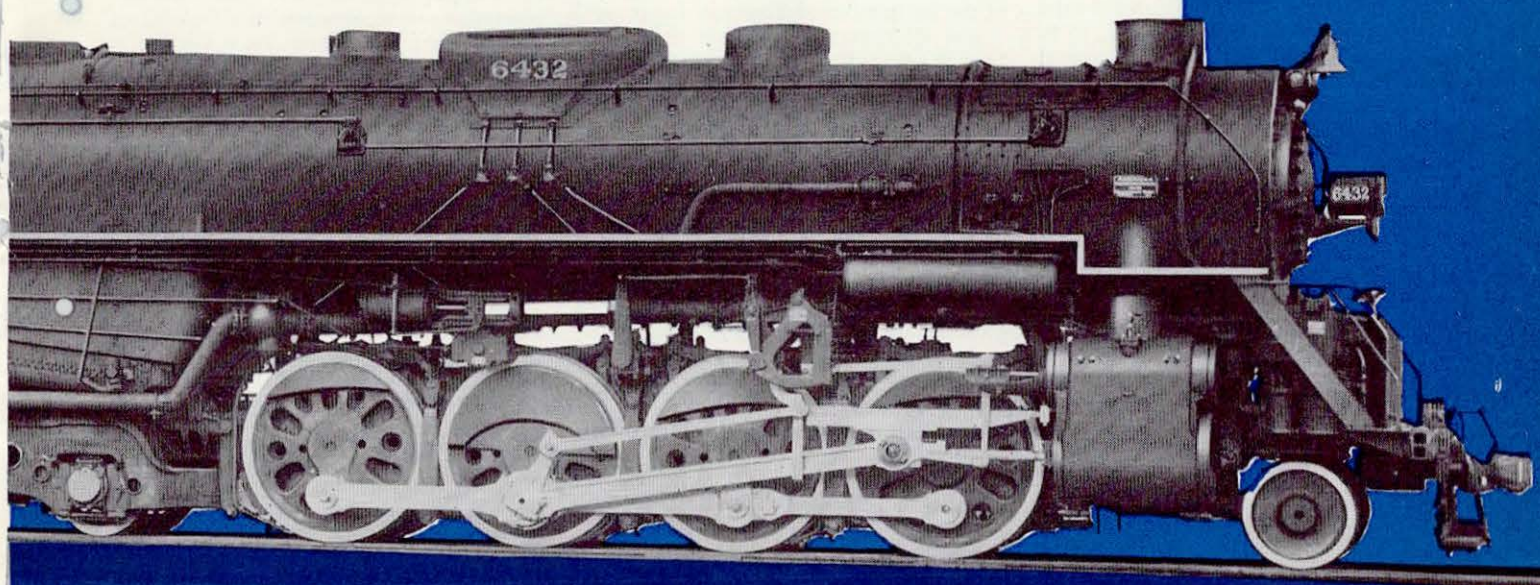
With this fleet of thirty-two modern, high-speed, freight locomotives strengthening their motive power, the Wheeling and Lake Erie Railway is enviably equipped to handle their enormous task.



AMERICAN LOCOMOTIVE

Manufacturers of Mobile Power

Steam, Diesel and Electric Locomotives, Marine Diesels, Tanks, Gun Carriages and other Ordnance



war program should suffer serious setbacks through pranks of children.

"It is because of the great influence that school superintendents can and do wield over children under their supervision that I appeal to you at this time. I need not implore you to impress upon the children that uninterrupted railroad operation is most vital, for I have every confidence that you will do this. But I ask you to do more. Won't you please immediately inaugurate in your city a 'Stay Away from the Tracks' campaign, enlisting every child under an oath of honor?"

Mexico Seeks More Funds for 1942 Construction

The House of Representatives of Mexico is studying a request submitted by the President of the Republic, seeking authority to issue an additional 8,500,000 pesos of Mexican railroad bonds to carry out the minimum program of the Department of Communications and Public Works for the construction of railroads during the remainder of 1942. The 13,500,000 pesos already authorized are insufficient to complete the program.

Equipment and Supplies

LOCOMOTIVES

New York Central Orders 25 Steam Locomotives

The New York Central has placed an order for 25 steam locomotives of 4-8-2 wheel arrangement with the Lima Locomotive Works. Construction of these locomotives is expected to begin in November of this year. The inquiry for this equipment was reported in the *Railway Age* of September 19.

The Western Pacific has received authorization from the United States district court at San Francisco, Cal., for the purchase of nine locomotives, to help haul the railroad's heavy war load, at approximate cost of $2,800,000. Three of the new motive power units will be Diesel-electric main-line engines of 5,400 hp. each, to be built by the Electro-Motive Corporation at cost of $506,350 each, or a total of $1,519,050. The remaining six will be steam freight locomotives of 4-8-4 wheel arrangement, to be built by the Lima Locomotive Works at cost of $210,530 each, or a total of $1,263,180. Delivery of the new locomotive power is expected during the first six months of 1943. The railroad's application for purchase authority stated that funds on hand would be used to make an initial payment of $695,558 or 25 per cent of the total cost, with the balance to be covered by the sale of equipment notes.

IRON & STEEL

The Bessemer & Lake Erie has placed an order for 2,300 tons of steel rail with the Carnegie-Illinois Steel Corporation.

The Lehigh & New England has placed an order for 200 gross tons of steel rail with the Bethlehem Steel Company.

Supply Trade

Taylor-Wharton Iron & Steel Co. Celebrates 200th Anniversary

The Taylor-Wharton Iron & Steel Co. will celebrate its 200th year in the iron industry and the 50th year of making Hadfield's manganese steel on October 17, 1942, when representatives of the Army and Navy, and George R. Hanks, president of the company, will speak, and the faculty and pupils of the local High Bridge, N. J., high school will stage a pageant based on the company's history.

The company, originally named the Union Iron Works, was founded by William Allen and Joseph Turner, members of the Philadelphia Common Council and of the Pennsylvania Provincial Assembly, and the lease whereby Mr. Allen obtained 3,000 acres adjacent to a forge already in existence, the ruins of which still stand on the Taylor-Wharton grounds, was dated December 1, 1742. Robert Taylor arrived in America from Ireland in 1758 at the age of 18 and first joined the Union Iron Works as a bookkeeper, becoming the works manager at Union Furnace in 1769. He took active charge of the iron works in 1780 and continued in control of the works after the deaths of both Allen and Turner, in 1780 and 1783, respectively. The works made supplies for the army during the War of 1812 and the Mexican War, as well as farming equipment and fittings for the famous Conestoga wagons which were instrumental in opening up the west. Robert Taylor died in 1821 and was succeeded by his son, Archibald Stewart Taylor.

The building of the Central of New Jersey enabled the works to obtain anthracite coal and to bring in iron ore from distant mines. The railroad gave business to the Taylor works for rails, coupling links and pins as well as car wheels, axles and other railroad equipment. Archibald Stewart Taylor died in 1860 and was succeeded by his son, Lewis H. Taylor, who operated the works as a private business and then as the partnership of Taylor & Large until it was incorporated in 1868 as the Taylor Iron Works. By 1877, the Taylor works were producing 50 axles, 100 car hooks and 100 car wheels a day, and the plant had five trip hammers and two turbine wheels, the latter operated by the south branch of the Raritan river.

In 1892 the Taylors obtained the American rights for the manufacture of manganese steel, which had been invented by Robert Hadfield of England. In association with William Wharton, Jr., & Co., of Philadelphia, the Taylor Iron & Steel Co., as the High Bridge works was then known, installed the first railroad frog with a cast manganese steel plate in its center on August 28, 1894, in Brooklyn, N. Y., and some months later the first curved manganese steel rail was installed in Philadelphia.

The United States Army and Navy adopted the high-carbon cast-steel projectiles made by the Taylor works under Hadfield patents and many eight-, ten-, and twelve-inch projectiles were manufactured by the company for use during the Spanish-American War. The Taylor-Wharton Company developed the "Panama dipper teeth," and these were fitted on practically all the steam-shovels digging the Panama canal.

Lewis H. Taylor died in 1908 at the age of 97 and was succeeded by his son, William J. Taylor. In 1912, the Taylor Iron & Steel Co. absorbed William Wharton, Jr., & Co., and became the Taylor-Wharton Iron & Steel Co., under the presidency of Knox Taylor. In 1915 a new plant at Easton, Pa., was built which, during World War I, produced 538,136 shell forgings. Taylor-Wharton also made forgings for four-inch naval guns, tank treads, helmets, railroad and marine equipment and much other material for war purposes. Knox Taylor continued as president until his death in 1922, and was succeeded by his cousin, Percival Chrystie, who served until 1929, when he was succeeded by George R. Hanks, the present president.

H. V. Putman, manager of the transformer division of the **Westinghouse Electric & Manufacturing Co.,** has been elected a vice-president of the company. Mr. Putman was appointed manager of the Westinghouse transformer division in November, 1940.

All divisions of the **American Rolling Mill Company,** Middletown, Ohio, have received the Army-Navy "E" award for excellence in production. The Army-Navy "E" burgee and lapel buttons were presented to the Middletown and Hamilton, Ohio, divisions and their employees on October 5 and similar presentation ceremonies were held on succeeding days at the Butler, Pa., Ashland, Ky., and Zanesville, Ohio, plants. Charles R. Hook, president of the company, accepted the banner and buttons on behalf of the divisions and the employees.

Stirred by National Safety Council reports indicating loss of almost 110,000,000 man days in American industry from disabling accidents in the first seven months of 1942, the **United States Steel Corporation** on October 8 announced an intensification of the accident prevention and industrial safety program in all plants of its subsidiary companies. At a meeting in Pittsburgh, Pa., safety representatives of the companies pledged increased efforts in stimulating safety consciousness among all employees. Posters, plant meetings, and competition between plants and companies will feature the campaign to fire the enthusiasm of the workers and supervisors in the exercise of care in the conduct of production tasks.

The Army-Navy "E" award for excellence in production was conferred upon the Commonwealth (Granite City, Ill.) and Eddystone (Eddystone, Pa.) plants of the **General Steel Castings Corporation,** Eddystone, Pa., by Col. Merle H. Davis, chief of the St. Louis Ordnance district, on October 1. Harrison Hoblitzelle, president of the General Steel Castings Corporation, accepted the banner on behalf of

the company and its workmen. The General Steel Castings Corporation is engaged in the manufacture of tank hulls, and is employing its experience in casting large, one-piece locomotive beds.

At the Eddystone plant, the burgee was presented by Rear Admiral Charles W. Fisher, director of shore establishments, U. S. N., and the pins by Col. D. N. Hauseman, district chief of the Philadelphia Ordnance district. Following the presentation, the representatives of the employees and the guests of the company attended a reception for the Army and Navy officers.

More than 8,000 men are employed in the construction of the $150,000,000 Geneva works, near Provo, Utah, which is being built by the Columbia Steel Company, a subsidiary of the **United States Steel Corporation,** for Defense Plant Corporation. The new construction at the Geneva works and development of the Geneva coal mine are well ahead of schedule, with the Geneva works scheduled to produce pig iron by next April. Actual production of steel is expected to commence in May and the plant's structural mill will be in operation by June, as will be the big slabbing mill. Most of the 60 miles of spur track within the plant site have already been completed and foundations for the large blast furnaces, coke ovens, and other permanent installations are complete. The Geneva coal mine, which will supply coal to the new plant, will start production this month. Six and one-half miles of railroad, to haul coal from the mine to the new plant, have been completed, as has the vehicle highway, from Columbia, Utah, to the Geneva mine in Forest Canyon.

OBITUARY

R. W. Burnett, president of the Ajax Hand Brake Company, Chicago, died in that city on October 13.

George C. Isbester, railroad sales manager of Yale & Towne Mfg. Co., at Chicago, died in that city on October 10.

Construction

LONG ISLAND.—This company has awarded a contract for work in connection with the construction of a new station at Woodhaven, N. Y., at estimated cost of $36,588, to Kuhn, Smith & Harris, Inc., of New York.

NEW YORK CENTRAL.—This company has awarded a contract for the reconstruction of stalls 11 to 22 of its enginehouse at Gardenville, N. Y., to the John W. Cowper Co., Inc., of Buffalo, N. Y.

READING.—This company has awarded a contract for repairs to certain of its freight houses and to the oil house in the vicinity of Front and Noble streets and Pier 36, Philadelphia, Pa., at estimated cost of $30,000, to the Haverstick-Borthwick Company of Philadelphia.

Financial

ALABAMA GREAT SOUTHERN.—*Requests Bids on Bond Issue.*—This railroad has requested bids on October 26 for the purchase of $9,500,000 principal amount of its first mortgage 3¼ per cent bonds, series A, to be dated November 1, 1942, and to mature November 1, 1967. (Previous item —*Railway Age* of September 26, page 510.)

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—This company has been authorized by the Interstate Commerce Commission, Division 4, to abandon its branch line from Kiowa, Kans., to Gerlane, 9.9 mi.

ATCHISON, TOPEKA & SANTA FE.—*Abandonment Recommended.*—In a proposed report, Examiner Jerome K. Lyle recommends to the Interstate Commerce Commission, Division 4, that it authorize this road to abandon that part of a branch line extending from Benedict Junction, Kans., to Madison Junction, approximately 40 miles, but deny authority to abandon the part of the same branch extending from Madison Junction to Emporia Junction, approximately 23 miles. In the same report the examiner recommends that the commission authorize this company to abandon that part of a branch line extending from a point about three miles south of Eureka, Kans., to Moline, approximately 34 miles, but deny authority to abandon that part from the point near Eureka to Madison Junction, approximately 26 miles.

BALTIMORE & OHIO.—*Abandonment.*—This road and its subsidiary, the Baltimore & Ohio Southwestern, have filed with the Interstate Commerce Commission a joint application seeking authority to abandon and abandon operation of the Southwestern's 17.7-mile line between Omaha, Ill., and Shawneetown.

CHICAGO, BURLINGTON & QUINCY.—*Abandonment.*—This road has been authorized by Division 4 of the Interstate Commerce Commission to abandon the portion of its branch line extending from Salem, Nebr., 10.74 miles northeasterly to Shubert.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon 12 miles of branch line between Goshen Junction, Wash., and Kulshan.

CHESAPEAKE & OHIO—VIRGINIAN.—*Abandonment, Trackage Rights & Operation.*—Permission has been granted by Division 4 of the Interstate Commerce Commission to the Chesapeake & Ohio to abandon, and to the Virginian to abandon operation under trackage rights over a portion of the branch line between a point approximately midway between Sugar Creek Junction, W. Va., and Macdonald and a point near Glen Jean, about 3.3 miles. The line to be abandoned is closely adjacent and generally parallel to the Loup Creek branch of the Chesapeake & Ohio, which affords access to all points affected, and rail service over the Loup Creek branch will be substituted for the operations discontinued. Authority is granted the Virginian to operate by trackage rights over the Loup Creek branch under the terms and traffic conditions under which it has operated over the line to be abandoned.

DELAWARE & NORTHERN.—*Abandonment.*—Authority has been granted by the Interstate Commerce Commission, Division 4, to abandon as to interstate and foreign commerce the entire line of this road, consisting of 37.3 mi. between East Branch, N. Y., and Arkville.

DENVER & RIO GRANDE WESTERN.—*Investment in Subsidiaries.*—This road has applied to the Interstate Commerce Commission for approval of a plan whereby it would purchase with $27,500 received in dividends from its highway affiliates 257 additional shares of Rio Grande Motor Way stock. The proceeds would be used by Rio Grande to finance in part the purchase of two buses and five tractors at a total cost of $139,288. Meanwhile the 257 additional shares of Rio Grande stock would be delivered to the Reconstruction Finance Corporation along with other such stock which R. F. C. holds as collateral.

ERIE.—*Reorganization of Northern of New Jersey.*—The United States district court at Newark, N. J., on October 5 set November 9 as the date for final hearing on the reorganization plan of the Northern of New Jersey. The court denied a petition to reopen hearings on the plan made by Cameron Blaikie, Jr., and A. H. Lawrence, stockholders of the Northern, and ruled that Messrs. Blaikie and Lawrence should mail no further letters or circulars bearing the name of the railroad or the trustees. It was reported that more than 80 per cent of the stockholders have voted in favor of the plan under which the Erie will acquire the Northern's 25 miles of trackage between Jersey City, N. J., and Nyack, N. Y.

LOUISVILLE & NASHVILLE.—*Abandonment.*—Authority has been granted to this road by Division 4 of the Interstate Commerce Commission to abandon that part of its Swan Creek branch extending from a point about one mile west of Swan Creek Junction, Tenn., to Gordonsburg, approximately 15 miles. Operation of this line was discontinued by authority of the commission on December 30, 1939.

At the request of this company the commission has dismissed its petition in Finance Docket No. 13702 requesting reconsideration of the Commission's denial of the portion of its application for permission to abandon the line between Fincastle, Ky., and Maloney. This line is part of the North Winchester-Maloney line requisitioned by the War Production Board while the abandonment application was pending before the commission.

NEW YORK CENTRAL.—*Acquisition of Control.*—Authority has been granted this road by the Interstate Commerce Commission, Division 4, to acquire control of its leased line, the St. Joseph, South Bend &

News Department continued on second left-hand page

81 Tank Cars—715,000 Gals.—
5,300 Gross Tons—911 Miles
With One and Same GM Diesel—
Only Two Stops for Refueling

GENERAL MOTORS LOCOMOTIVES

General Motors 5400 hp. Diesel Freight Locomotive, with an overall length of 193 feet, comprises four short units, each unit powered by one 1350 hp., 16-cylinder, 2-cycle, GM Diesel Engine.

ELECTRO-MOTIVE

GENERAL MOTORS CORPORATION

B&O

THE Baltimore and Ohio, the first eastern railroad to adopt Diesel passenger locomotives, has again made history. One of their new 5400 Hp. Diesel Freight Locomotives, built by Electro-Motive Division of General Motors Corporation, hauled a solid train of 81 tank cars of oil — 715,000 gallons — 5300 gross tons — from Chicago to Twin Oaks (Philadelphia), Pa.

This was one of the heaviest single through-rail shipments of oil on record and the entire run of 911 miles was made with one and the same locomotive. Five stops were made for customary crew changes and inspections, but at only two of these stops was it necessary to refuel the locomotive.

These new GM Diesels will permit the release of a considerably larger number of heavy steam locomotives for other important services. This is another outstanding example of how GM Diesels make it possible for the railroads to meet war demands for increased motive power and with savings of more than 50 per-cent in critical materials — because one ton of materials in a GM Diesel will do the work of more than two tons of materials in a steam locomotive. Conservation is vital to VICTORY and—

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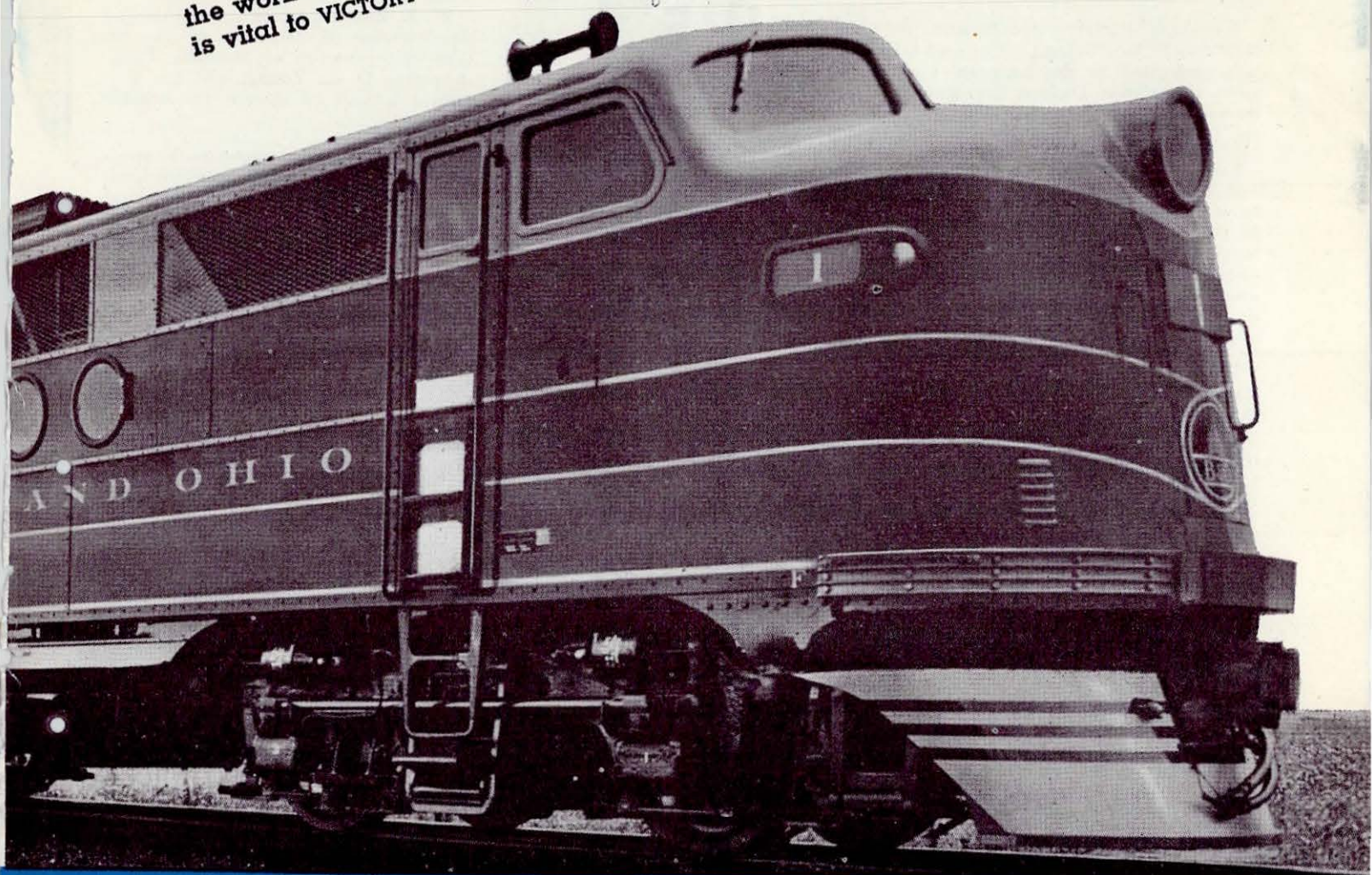


IVE DIVISION

LA GRANGE, ILLINOIS, U. S. A.

Southern, by purchase of a majority of its capital stock.

READING.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon about one-quarter mile of track at the end of its North Mahanoy Colliery branch in Schuylkill County, Pa.

ST. LOUIS-SAN FRANCISCO—KANSAS CITY SOUTHERN.—*Abandonment.*—Authority has been granted these companies by the Interstate Commerce Commission, Division 4, to abandon an interchange track 1,353 feet long connecting their lines at Gulfton, Mo.

ST. LOUIS-SOUTHWESTERN.—*Court Takes Interest Plea under Advisement.*—The United States district court at St. Louis, Mo., on October 9 took under advisement the petition of this road to pay $1,384,050 in back interest. (Previous item—*Railway Age* of October 10, page 587.)

SOUTHERN PACIFIC. — *Abandonment.* — This road has applied to the Interstate Commerce Commission for authority to abandon an 0.6-mile section of its South San Francisco branch in Baden, Calif.

SOUTHERN PACIFIC. — *Abandonment.* — This road has applied to the Interstate Commerce Commission for authority to abandon the 13.95-mile section of its River Farms branch between Knights Landing Junction, Calif., and Boyer.

SOUTHERN PACIFIC.—*Abandonment by the Texas & New Orleans.*—This road has been authorized by the Interstate Commerce Commission, Division 4, to abandon the part of its Paris branch between Ennis, Tex., and Kaufman, 27.35 mi.

TENNESSEE CENTRAL.—*Securities.*—This road has applied to the Interstate Commerce Commission for authority to issue $260,000 of first mortgage, four per cent bonds, series A, and to pledge and repledge such bonds as security for notes which may be issued to reimburse its treasury for expenditures made from income or other money in the treasury.

TENNESSEE CENTRAL. — *Approval of Equipment Trust Certificates Revoked.*—Because of its inability to procure the equipment sought, this road has obtained from the Interstate Commerce Commission a supplemental order in Finance Docket No. 13670, vacating a previous order of April 13, 1942, which had authorized assumption of liability with respect to $342,000 of equipment trust certificates, series E, to be sold to the Reconstruction Finance Corporation.

Average Prices Stocks and Bonds

	Oct. 13	Last week	Last year
Average price of 20 representative railway stocks..	30.07	29.49	29.00
Average price of 20 representative railway bonds..	68.79	68.53	64.59

Dividends Declared

Elmira & Williamsport.—$1.14, semi-annually, payable November 2 to holders of record October 20.

Northern Railroad of New Hampshire.—$1.50, quarterly, payable October 31 to holders of record October 15.

Piedmont & Northern.—50¢, quarterly, payable October 20 to holders of record October 5.

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

H. S. Harrison has been elected treasurer of the Lake Superior & Ishpeming, with headquarters at Cleveland, Ohio.

Harold B. Bornemann has been appointed general solicitor of the Lehigh & New England, with headquarters at Philadelphia, Pa.

John C. Shields, general counsel of the Pere Marquette, with headquarters at Detroit, Mich., has been appointed also general counsel of the Manistee & Northeastern.

Carleton S. Hadley, whose appointment as general counsel of the Wabash, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of October 3, was born at Lowell, Mass., on December

Carleton S. Hadley

24, 1902, and graduated from Washington University, St. Louis, Mo., in 1925 and Washington University Law School in 1928. During summers while attending the university, he worked in several departments of the Missouri Pacific. After receiving his law degree, he was admitted to the bar in the state of Missouri and in 1935 he was admitted to practice before the Supreme Court of the United States. In August, 1928, he became associated with the law firm of Carter, Jones & Turney at St. Louis, and was appointed assistant attorney for the St. Louis Southwestern, by the firm members, who were at that time general solicitors of the Cotton Belt. In 1933, when the Cotton Belt organized its own law department, Mr. Hadley was appointed assistant general attorney and on January 1, 1936, he was promoted to assistant general solicitor. At the same time, following the filing of a reorganization plan by the Cotton Belt in 1935, he was appointed assistant general counsel for the trustee. On September 1, 1939, Mr. Hadley went with the Terminal Railroad Association of St. Louis as general counsel and two years later he was elected vice-president and general counsel, which position he held until his recent appointment, effective October 1.

Russel L. Snodgrass, vice-president of finance and corporate relations of the Baltimore & Ohio, with headquarters at Baltimore, Md., has also been elected to that position on the Alton.

OPERATING

A. G. Garrett has been appointed acting superintendent of the Kansas City Southern at Shreveport, La.

C. W. Havens has been appointed acting assistant superintendent of the Baltimore & Ohio at Toledo, Ohio.

E. E. Seise has been appointed assistant to the superintendent of transportation of the Erie, with headquarters at Cleveland, Ohio.

C. C. Soesbe has been appointed trainmaster of the Chicago Great Western at Clarion, Iowa, succeeding **T. M. Mickelson,** deceased.

J. L. Corbitt has been appointed superintendent of transportation of the Ft. Worth & Denver City and the Wichita Valley, a newly created position, with headquarters at Ft. Worth, Tex.

W. E. Eagan has been appointed acting superintendent of terminals of the St. Louis-San Francisco at Memphis, Tenn., succeeding **O. L. Young,** who has been granted a leave of absence for military service.

Fred H. Hooper, assistant to the president of the Kansas City Southern-Louisiana & Arkansas lines, with headquarters at Kansas City, Mo., has been appointed assistant general superintendent of transportation, with headquarters at Kansas City and Shreveport, La.

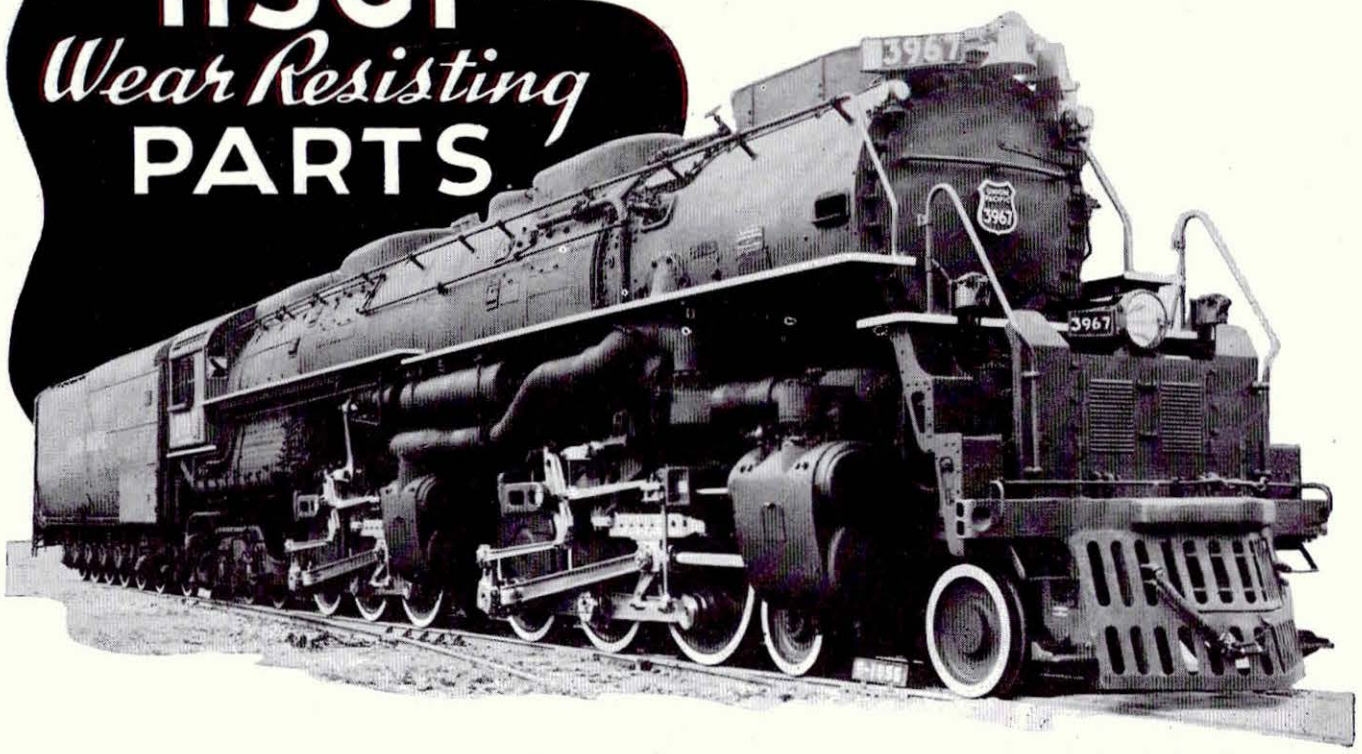
F. F. Getsfred has been appointed assistant superintendent in charge of transportation of the Nebraska division of the Union Pacific, with headquarters at Omaha, Neb., and **E. Hicks** has been appointed assistant superintendent, nights, in charge of transportation of the Nebraska division, with the same headquarters. **J. L. Phillips** has been appointed trainmaster at Ogden, Utah.

W. H. Bailey, trainmaster of the Missouri Pacific at Van Buren, Ark., has been promoted to acting superintendent of the Eastern division, with headquarters at Kansas City, Mo., succeeding **C. W. Pace,** granted a leave of absence to serve with the Office of Defense Transportation. **R. B Butler,** trainmaster at Coffeyville, Kan., has been transferred to Van Buren, relieving Mr. Bailey, and **F. Rothrock** has been appointed acting trainmaster at Coffeyville, replacing Mr. Butler.

H. D. Kruggel, whose promotion to superintendent of the Monongahela division of the Pennsylvania at Pittsburgh, Pa., was reported in the *Railway Age* of August 22, was born in Ohio on February

News Department continued on next left-hand page

HSGI *Wear Resisting* PARTS



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Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
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Cylinder Snap Rings
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HUNT-SPILLER *Air Furnace* GUN IRON

17, 1903. Mr. Kruggel entered the service of the Pennsylvania on June 4, 1922, as machinist helper, leaving the service on June 10, 1922. He returned to the Pennsylvania on June 20, 1927, as assistant on engineer corps, New York division, becoming assistant supervisor of the Williamsport division on June 20, 1928. Mr. Kruggel was transferred to the Philadelphia division on July 7, 1928, and to the Philadelphia Terminal division on June 1, 1929. He became supervisor of the Sunbury division on August 1, 1929, transferring to the Cumberland division (now part of the Philadelphia division) on February 1, 1931, and to the Delmarva division on September 25, 1931. He was transferred to the Williamsport division on July 24, 1933, and to the Eastern division on February 14, 1934. Mr. Kruggel became assistant trainmaster of the Panhandle division on January 16, 1935, being transferred to the Middle division on April 16, 1939. He was appointed passenger trainmaster of the Middle division on February 1, 1941, which position he held until his recent promotion to superintendent of the Monongahela division.

Michael A. Smith, whose retirement as general manager of the Pittsburgh & Lake Erie at Pittsburgh, Pa., was reported in

Michael A. Smith

the *Railway Age* of October 10, was born at Norwalk, Ohio, on September 7, 1872, and was educated in the public schools of Norwalk. He entered the service of the Wheeling & Lake Erie as a locomotive fireman on August 29, 1890, and was advanced to locomotive engineer in 1896. Mr. Smith left the Wheeling & Lake Erie in 1899 and in March, 1900, entered the service of the Pittsburgh & Lake Erie as a locomotive inspector, serving in that capacity until June, 1901. From the latter date until November, 1902, he was traveling fireman, and then served as enginehouse foreman until June, 1904. Mr. Smith then became general foreman at the Glassport shops, which position he held until December, 1912, when he was transferred to the East Youngstown shops, where he remained until September, 1917. From the latter date until June, 1923, he served as trainmaster, and then became assistant superintendent of motive power. He was promoted to superintendent of motive power in September, 1927, and in November, 1930, he was promoted to general manager, which position he held until his retirement.

Michael J. Kelly, general agent of the Railway Express Agency at Indianapolis, Ind., has been promoted to superintendent of the Cincinnati, Ohio, division, succeeding **Emil J. Hardesty,** who has been appointed superintendent of organization in the Central department at Chicago, to succeed **R. S. Hampshire,** who has been transferred to New York.

Michael J. Kelly

Mr. Kelly began his career as a wagon boy in Louisville, Ky., where he served subsequently in various capacities. He joined the former Southeastern Express Company in May, 1921, and was general agent and superintendent until August, 1938, when the business and operations were taken over by the Railway Express Agency. He then became division supervisor at Louisville and in July, 1939, he was appointed general agent at Grand Rapids, Mich., being transferred to Indianapolis in September, 1941.

Mr. Hardesty has been in the express business for 37 years, which include a period of eight years in Honolulu, Hawaiian Islands. Returning to the mainland in 1918 he spent 18 years at Salt Lake City,

Emil J. Hardesty

Utah, first as route agent and later as general agent, then transferring to Denver, Colo. Mr. Hardesty was appointed superintendent at Spokane, Wash., in April, 1940, and in August, 1941, he was transferred to Cincinnati, which position he held until his recent apointment.

TRAFFIC

M. M. Scanlan has been appointed industrial agent of the Great Northern, with headquarters at St. Paul, Minn.

R. M. May has been appointed superintendent of dining car service of the Gulf, Mobile & Ohio, with headquarters at East St. Louis, Ill.

F. E. Clarke has been appointed southwestern passenger agent of the Baltimore & Ohio at Dallas, Tex., succeeding **C. H. Hart,** who has been granted a leave of absence to enter military service.

C. O. Gustafson, commecial agent of the Minneapolis & St. Louis at San Francisco, Cal., has been promoted to general agent at Denver, Colo., a newly created position.

J. J. McLaughlin, traffic agent of the Chicago Great Western at Los Angeles, Cal., has been promoted to general agent at San Francisco, Cal., succeeding **Donald A. MacKinnon,** who has entered military service.

R. E. Carter, general agent of the Kansas City Southern-Louisiana & Arkansas lines at Houston, Tex., has been promoted to executive general agent at Beaumont, Tex., and **N. G. Stripling,** commercial agent at Houston, has been advanced to acting general agent at that point, succeeding Mr. Carter.

John C. Patteson, European manager of the Canadian Pacific, has been appointed Canadian representative of the Ministry of Supply. Mr. Patteson has been on loan to the Ministry of Supply for two years as director-general of the supply service which created the present organization for transport of goods and workers.

J. L. Fortier, assistant general freight agent of the Chicago, Indianapolis & Louisville (Monon) at Chicago, has been promoted to general freight agent, with the same headquarters succeeding **James R. VanDelinder,** who died on June 27, as reported in the *Railway Age* of July 4. **B. E. Widman,** in charge of tariffs in Chicago, has been advanced to assistant general freight agent at Chicago, relieving **C. A. Pfister,** who has been transferred to the duties formerly handled by Mr. Fortier.

James Alexander Brass, secretary of the Railway Association of Canada, with headquarters at Winnipeg, Man., has been promoted to general secretary, with headquarters at Montreal, Que., succeeding **Charles Percival Riddell,** who has retired because of ill health. Mr. Brass was born at Hamilton, Ont., on December 26, 1887, and entered railroad service on March 28, 1903, with the Canadian Pacific and served until July 1, 1910, as call boy, car foreman's clerk, and locomotive foreman's clerk at Moose Jaw, Sask. From July, 1910, to October, 1922, Mr. Brass served as clerk, assistant chief clerk and chief clerk to general superintendent at

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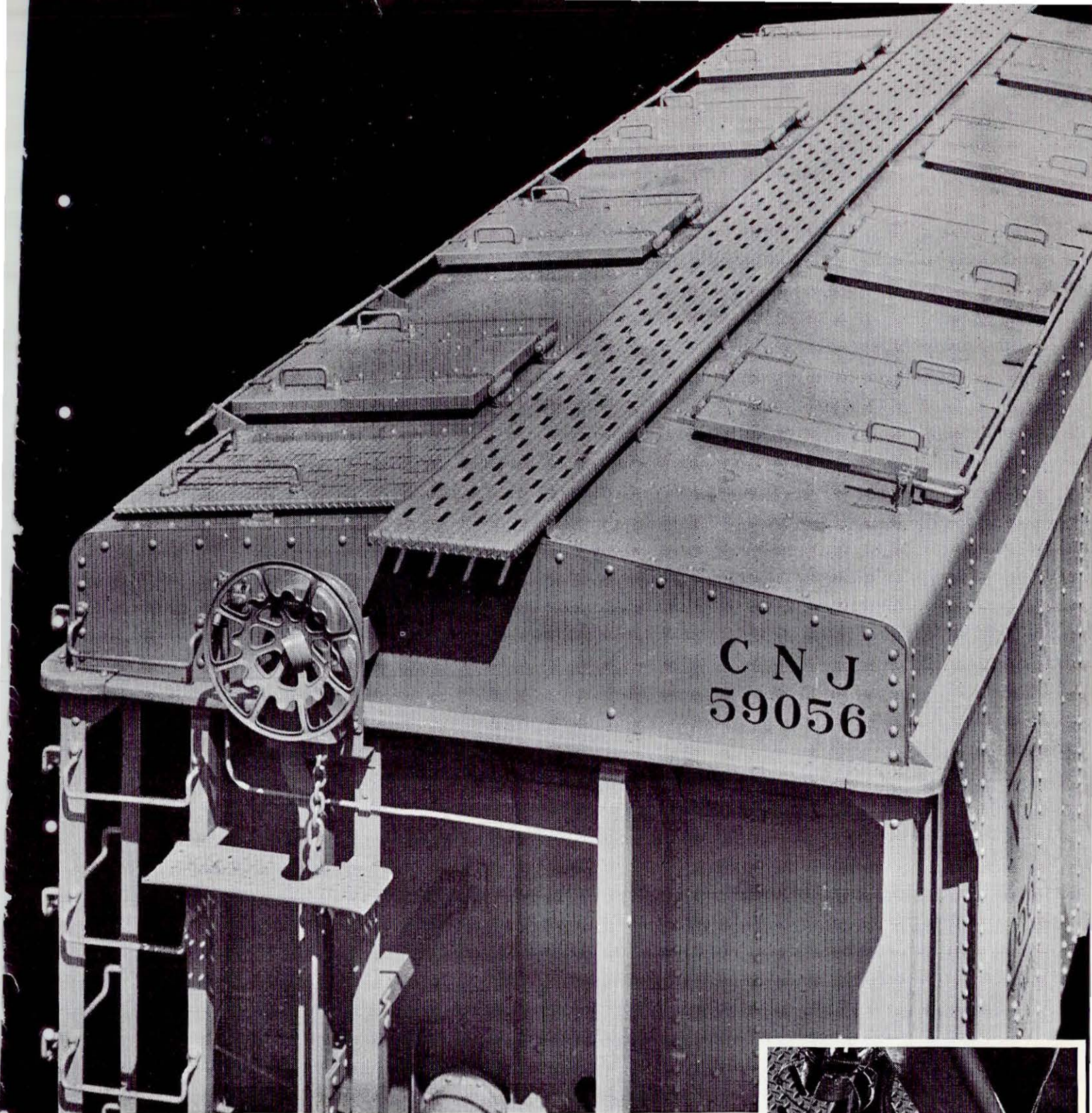

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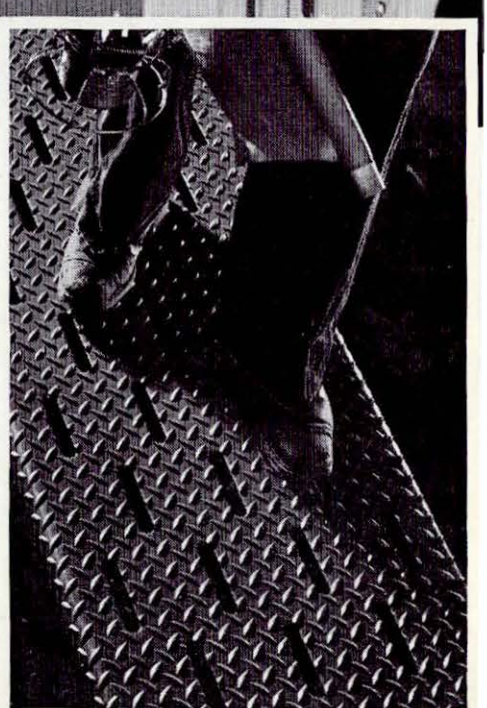

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Moose Jaw and on the latter date he became chief clerk to vice-president at Winnipeg. On May 1, 1928, he was appointed assistant superintendent at Wilkie, Sask., being transferred to Minnedosa, Man., on July 1, 1937, which position he held until August 1, 1939, when he became secretary of the Railway Association of Canada.

Mr. Riddell was born at Stratford, Ont., on February 13, 1884. He entered railroad service in 1902 as freight checker for the Grand Trunk at Montreal and subsequently occupied various clerical positions. In August, 1908, Mr. Riddell became secretary to vice-president of the Grand Trunk and in 1911 he was appointed secretary to president of the Central Vermont. From 1912 to October, 1917, he was in charge of freight movement in the office of the general superintendent transportation, Grand Trunk. In October, 1917, he became assistant general secretary of the Railway Association of Canada, becoming general secretary on February 1, 1920.

Paul E. Carneck, general agent of the Southern Pacific at Kansas City, Mo., has been promoted to assistant to the general traffic manager, with headquarters at Chicago. Mr. Carneck started his railroad career in October, 1920, in the general agency of the El Paso & Southwestern (now part of the Southern Pacific) at Cleveland, Ohio. In November, 1924, he went with the Southern Pacific at Cleveland as traveling freight agent, where he remained until August, 1934, when he was transferred to Louisville, Ky., as district freight and passenger agent. In December, 1935, he was appointed general agent at Minneapolis, Minn., and in January, 1941, he was appointed general agent at Kansas City.

ENGINEERING & SIGNALING

L. W. Althof, division engineer of the Union Pacific at Spokane, Wash., has been transferred to Portland, Ore., and **E. F. Kidder** has been appointed division engineer at Spokane, succeeding Mr. Althof.

John P. Ensign, whose promotion to engineer maintenance of way of the Pittsburgh & Lake Erie at Pittsburgh, Pa., was reported in the *Railway Age* of October 10, was born on June 7, 1898, at Easton, N. Y. He received his B.S. degree in civil engineering in 1922 from Union College, Schenectady, N. Y., and entered railroad service on May 14, 1923, as rodman on the Electric division of the New York Central. Mr. Ensign was appointed assistant supervisor track on the same division on September 1, 1926, being promoted to assistant division engineer, Eastern division, on September 1, 1933. On July 1, 1938, he became assistant engineer track, line East, and on July 1, 1940, he was appointed supervisor track, Electric division, which position he held until his recent promotion to engineer maintenance of way.

Frank R. Paisley, whose promotion to assistant chief engineer of the Pittsburgh & Lake Erie at Pittsburgh, Pa., was reported in the *Railway Age* of October 10, was born at Beaver Falls, Pa., on December 29, 1889, and attended Carnegie Institute of Technology. He entered railroad service on August 23, 1911, with the Pittsburgh & Lake Erie, serving successively as chainman, rodman and transitman until October 16, 1922. He was inspecting engineer

Frank R. Paisley

and engineering assistant from October, 1922, to January 15, 1935, and on the latter date he became engineer maintenance of way at Pittsburgh, which position he held until his recent promotion to assistant chief engineer.

MECHANICAL

D. S. Neuhart, master mechanic of the Union Pacific at Los Angeles, Cal., has been promoted to superintendent of motive power and machinery with headquarters at Omaha, Neb.

J. W. Womble has been appointed assistant to vice-president (mechanical), of the Midland Valley, the Kansas, Oklahoma & Gulf and the Oklahoma City-Ada-Atoka, a newly created position, with headquarters at Muskogee, Okla.

John Roberts, chief of motive power and car equipment of the Canadian National, and managing director of National Railways Munitions, Limited, with headquarters at Montreal, Que., will in future devote his entire time to the direction of the big munitions plant operated by the National system.

SPECIAL

Dr. Frank R. Hirshfield has been appointed assistant chief surgeon of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., succeeding **Dr. U. Schuyler Anderson,** who has been called into military service.

PURCHASES AND STORES

The jurisdiction of **E. H. Hughes,** purchasing agent of the Kansas City Southern, with headquarters at Kansas City, Mo., has been extended over the Louisiana & Arkansas. Mr. Hughes assumes the duties of **William F. Wright,** purchasing agent of the L. & A., with headquarters at Minden, La., whose death on February 19 was reported in the *Railway Age* of March 7.

F. G. Murray has been appointed general storekeeper of the L. & A., a newly created position, with headquarters at Minden.

OBITUARY

T. B. Roberts, supervisor of apprentices of the Lehigh Valley, died at Packer Hospital, Sayre, Pa., on October 14.

Henry R. McLean, Eastern traffic agent of the Central of Georgia at New York, died on October 11 in Brooklyn hospital, New York, at the age of 60.

G. L. Lambeth, superintendent of motive power of the Gulf, Mobile & Ohio, with headquarters at Jackson, Tenn., died on October 5 after a short illness. Mr. Lambeth was born in Lynchburg, Va., in 1875 and entered railway service in 1894 as a machinist apprentice of the Southern. In 1910 he went with the Mobile & Ohio (now part of the Gulf, Mobile & Ohio) as a master mechanic and on March 20, 1920, he was advanced to superintendent of motive power and car equipment, with headquarters at Mobile, Ala. Three months later, his headquarters were transferred to St. Louis, Mo., and they were later established at Jackson. When the Gulf, Mobile & Northern and the Mobile & Ohio were consolidated into one system, the G. M. & O., Mr. Lambeth continued at Jackson as superintendent of motive power.

Edgar D. Hilleary, former vice-president in charge of traffic of the Reading and the Central of New Jersey, with headquarters at Philadelphia, Pa., died at his home in Madison, Conn., on October 9, after a prolonged illness, at the age of 65. Mr. Hilleary was born on September 10, 1877, at Petersville, Md., and attended St. John's College, Annapolis, Md. He entered railroad service on July 1, 1897, with the Philadelphia & Reading (now Reading) and held various clerical positions until June, 1905, when he became agent, Central States Despatch at Philadelphia. He then served with the Philadelphia & Reading successively as division freight agent, assistant general freight agent, general freight agent and freight traffic manager, becoming vice-president in charge of traffic in April, 1923. Mr. Hilleary retired on January 1, 1939, because of ill health.

Bayard R. Brenan, former assistant freight traffic manager of the New York Central at Cleveland, Ohio, died on October 10 at St. Petersburg, Fla., at the age of 61. Mr. Brenan was born at Marietta, Ohio, on January 5, 1881, and was graduated from Marietta Academy. At the age of 16 he began work with the Zanesville & Ohio (now Baltimore & Ohio) and in October, 1899, he went with the Norfolk & Western at Columbus, Ohio. In 1901 he entered the service of the Cleveland, Cincinnati, Chicago & St. Louis and served successively as clerk, assistant cashier, cashier, chief clerk, general agent, agent, assistant general freight agent, general freight agent and assistant traffic manager until July, 1932, when he became assistant freight traffic manager of the New York Central. Mr. Brenan retired a year ago because of ill health.

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Be sure your men keep every active tip clean. Keep cleaning drills handy, see that they are used often. In this way you can help get the most out of every cubic foot of oxygen. Let's each one of us be his own Waste Warden. By so doing we can speed final victory.

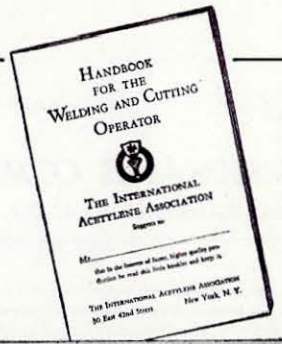
THE WASTE WARDEN

says:

DO close cylinder valve after use.
DO check your hose and connections for leaks.
DO keep your cylinder inventory low and return empties promptly.

* * *

DON'T use excessive pressures or oversize tips.
DON'T leave torch burning when not in use.
DON'T abuse cylinders.



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442 Hopper Coal Cars
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13 Passenger Equipment Cars

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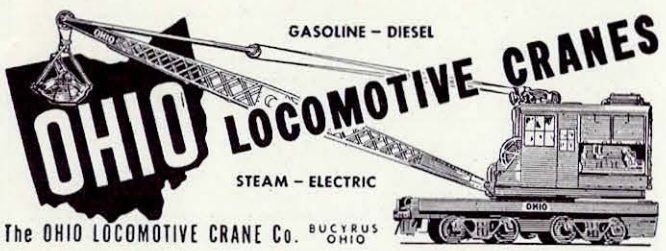

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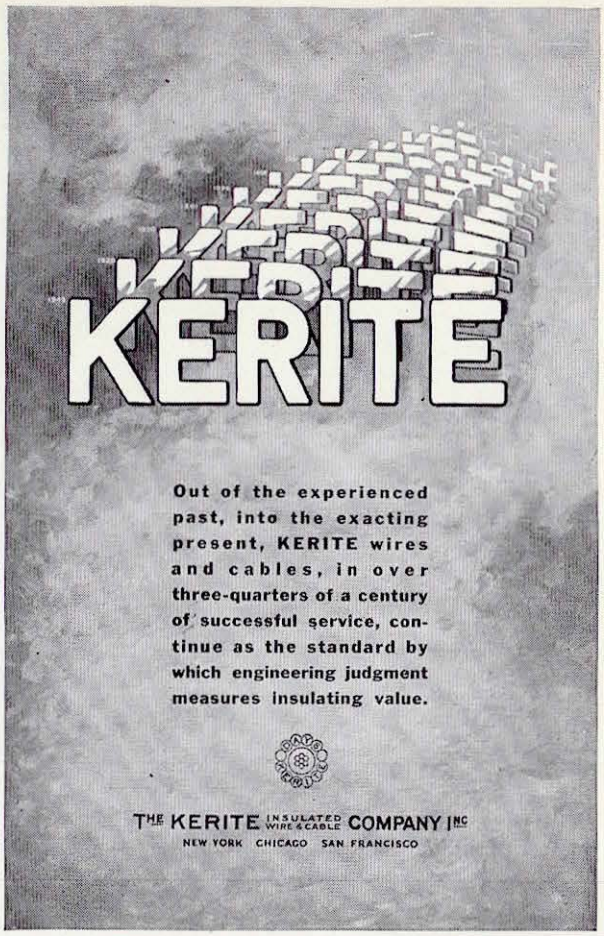
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● You get uniform, high quality *Certified* Steel when you draw on the large and complete stocks of the nearby Ryerson plant. Prompt shipment assured. Write for Stock List. Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

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Structurals, Lewis Iron, Plates, Sheets, Strip, Alloys, Cold Finished Steel, Tool Steel, Stainless, Mechanical Tubing, Boiler Tubes, Welding Rod, Babbit Solder, Reinforcing Nails, Rivets, etc.

In the most vital problem of transportation that ever confronted this country or the world — the problem of American railways in rendering sufficient service to enable our nation to achieve victory in the first "all-out" worldwide war — Schaefer Forged Steel Foundation Brake Gear Appliances are playing their part.

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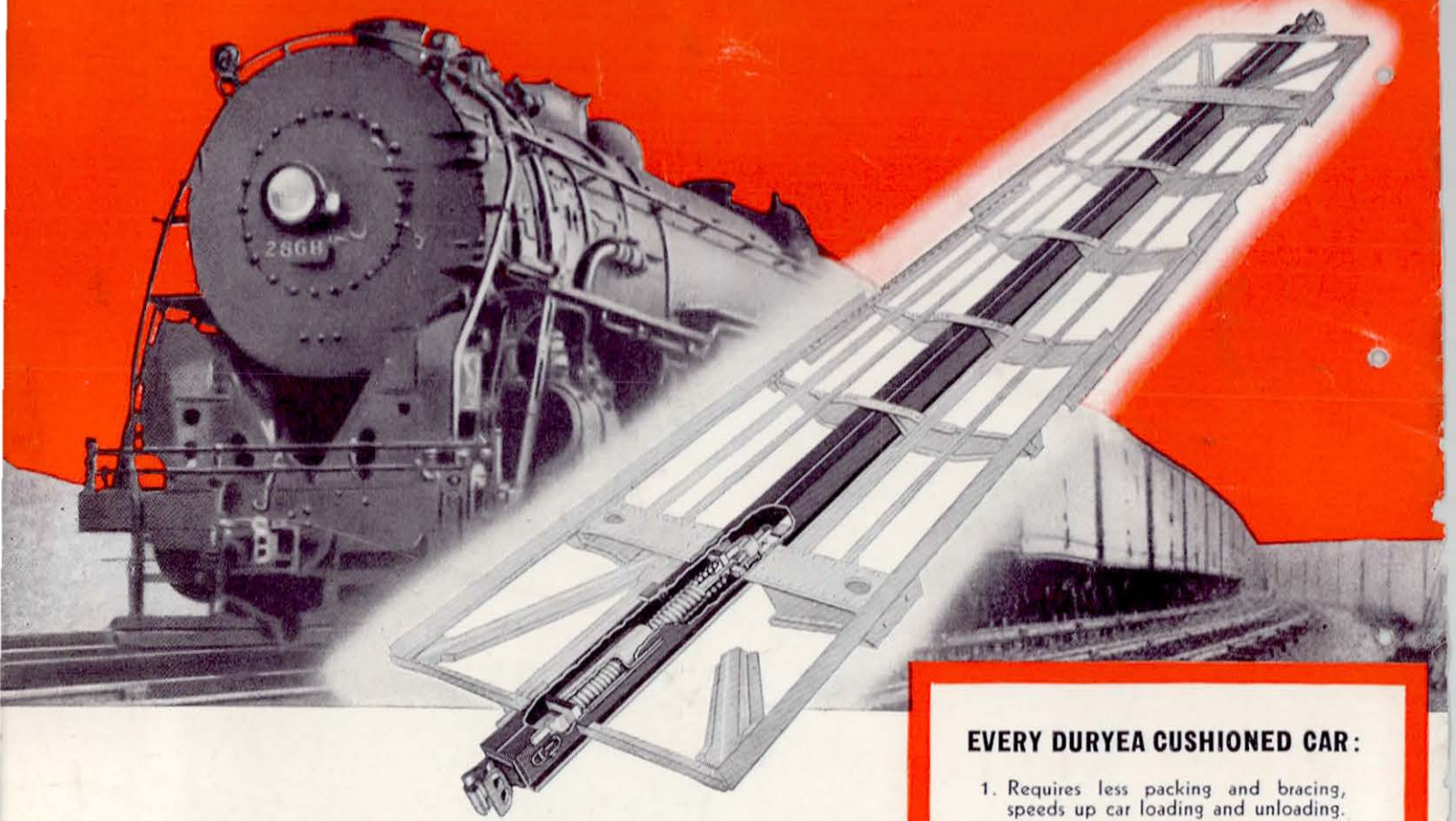
DROP-FORGED FOR LIGHT WEIGHT, HIGH STRENGTH, LONG LIFE AND SAFETY

DURYEA *Cushion* UNDERFRAME Meets the Needs of Total War . . . with Total Shockproof Protection



War freightloads are heavier, faster-moving, more vulnerable to the jolts of starting, stopping and switching. That's why Duryea-Cushioned Cars, whenever available, are preferred for vital shipments.

In the greatest test of all—WAR — the superior shockproofing power of Duryea Cushion Gear becomes daily more evident. The exclusive floating center sills and giant cushioning springs save packing costs, maintenance time and lading on every trip. Depend upon it, when unlimited car building is resumed, Duryea's wartime performance will not be forgotten. Railroads and shippers alike will benefit through the widespread recognition of the proven efficiency of Duryea Cushioning.

Write for illustrated booklet

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30 Rockefeller Plaza, New York, N. Y.
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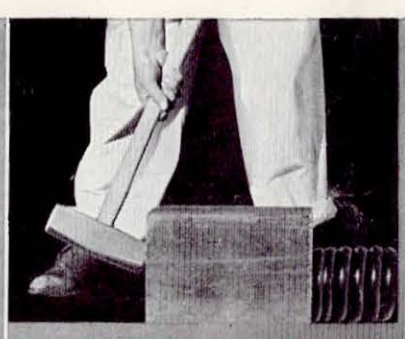
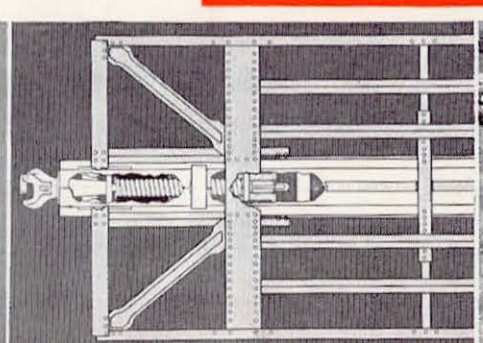
EVERY DURYEA CUSHIONED CAR:

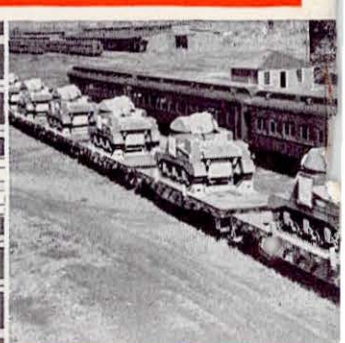
1. Requires less packing and bracing, speeds up car loading and unloading.
2. Gives shockproof protection to vital war shipments.
3. Permits faster handling, higher speeds—Duryea-Cushioned Cars can "take it."
4. Avoids delays and tie-ups due to draft gear failure.
5. Reduces maintenance cost and time on every part of the car.
6. Reduces slack to pre-determined ideal. (Excessive slack is one big cause of damage in today's long, heavily loaded trains.)
7. Reduces cast steel required as compared with conventional friction draft gear underframe and draft gear replacements.
8. Keeps cars off the cripple track—keeps 'em rolling!



HOW DURYEA CUSHIONING lessens shock. Left: Block of wood (sill) against wall will crack when hit with sledge. Right: With spring allowing block (sill) to slide, even hardest blows won't cause damage.



PHANTOM VIEW shows how springs and floating center sills cushion each wallop, protecting car and contents. Duryea Cushion Gear lasts entire life of car.



RAILROAD MEN: Duryea-Cushioning reduces maintenance costs and damage claims; *now costs no more than conventional construction.* Plan for the future—investigate Duryea now.

DURYEA *Cushion* UNDERFRAME FOR FREIGHT CARS

THE MODERN SAFEGUARD FOR SHOCKPROOF SHIPPING